

Q. Do I understand that you can't answer the question the way I put it? A. I don't understand it thoroughly enough.

Q. You just don't understand the question, is that it, Mr. Roland? A. It isn't completely clear in my mind, I mean, as to just what you have in mind.

Q. Now let us exclude from our mind for the moment all the facilities of Penn Water used for generation. It doesn't follow from that, does it, Mr. Roland, that all the remaining facilities are transmitting facilities, does it? A. That is true.

Q. Nor does it follow that all the remaining facilities [8758] are used for the transmission and sale of energy at wholesale transmitted from a state and consumed at any point outside thereof, does it? A. There would be some local distribution facilities that would not be involved in that kind of a transaction.

Q. Now, in the light of your answer at page 981, isn't it true that the facilities of Penn Water not used for local distribution, are not necessarily used for transmission and sale of energy at wholesale transmitted from a state and consumed at any point outside thereof?

[8759] THE WITNESS: Well, as I understand it now, we have eliminated the facilities for generation of electric energy and we have eliminated the facilities used for local distribution and you are asking me now if the balance of facilities are used for transmission and sale of electric energy at point outside the state; is that correct?

MR. MYSE: Well, that isn't quite correct, but I think it is substantially the way my question was except that I used a little bit different language.

THE WITNESS: Yes.

MR. GOLDBERG: Has the witness correctly understood your question so that if he answers your question it will be an answer?

MR. MYSE: I am willing to have him answer it with that understanding and if he answers it I will have a further question.

THE WITNESS: I would have to exclude a line that is leased to the Baltimore Company, for one thing, that is that 110 kv line that runs from Highlandtown Substation up to Gunpowder Substation, that is owned by Penn Water but I mean is not operated. It is leased to the Baltimore Company, that one.

By MR. MYSE:

Q. Why do you say that you would have to exclude that line? [8760] A. Well, that one certainly is not used for transmitting energy from one state to another, as I recall.

Q. Actually that line doesn't run to Highlandtown Substation, it runs to Philadelphia Road Substation? A. It is right across the street from that. There is no electrical connection, that is true. I said Highlandtown Substation is on one side of the street and Philadelphia Road is on the other.

. . .

[8775] Q. Let's look at the generating facilities for a moment of Penn Water. How many main hydro units does Penn Water have? A. Ten.

Q. Then it is true, isn't it, that eight of those ten main hydro units at Holtwood were used to generate 25-cycle, three-phase service? A. That is right, sir.

MR. GOLDBERG: What does counsel in his last question mean by service, electric energy?

[8776] MR. MYSE: Electric service, including electric energy, isn't that what you understood that I mean, Mr. Roland?

THE WITNESS: Well, ordinarily you use generation of electric energy.

By MR. MYSE:

Q. But it does generate other attributes of electric energy, does it not? A. It generates electric energy at some particular voltage and certain frequency. If you want to call those attributes, all right.

Q. So that only two out of the ten main hydro units are used to generate 60-cycle three-phase electric service or energy if you would have it that way, isn't that right?

A. Two of the units generate electric energy at 60-cycle.

Q. What are the steam units generating at? A. 60 cycles.

Q. In addition to that, there are two 5,000 kw frequency changers at Holtwood, are there not? A. I believe that is a nominal rating; there are two of them, I believe they are 6,250 kva rated frequency changers.

Q. Now, what are those frequency changers used for? A. To change the energy generated from 25 to 60 cycles or energy generated from 60 cycles to 25 cycles.

[8777] Q. Now, with respect to facilities used in local distribution, I think you mentioned or did you mention the Highlandtown Substation facilities? A. That is what I had in mind, that there might be something down there on the low-tension side at Highlandtown that might be considered local distribution.

Q. Well you, as an engineer, would consider them local distribution? A. Well, in my opinion, local distribution was a legal term, I would say that they are distribution facilities.

Q. You would say they are? A. There are certain parts of them that I think would certainly be classified as distribution facilities.

Q. And that is your opinion as an engineer wholly aside from any legal connotations? A. That is right.

Q. Now, what about the facilities used to serve the Holtwood Village, didn't you consider them distribution facilities? A. Yes, those would be distribution facilities.

Q. And they would be local distribution facilities in your opinion as an engineer, would they not? A. I don't know. As that word local is used in the Power Act, I should think that is a legal term used solely [8778] for retail sale and distribution.

Q. Now let me refer you to the question at the top of page 981: "Q. Do Holtwood and Susquehanna own and operate facilities for such transmission and sale at wholesale, which are not used in local distribution?" What did you mean when you answered that question "Yes" with an additional phrase? A. They are distribution facilities.

Q. What do you mean by the word "local"? What was your understanding? A. Well, there, of course, I stated with a possible exception, I wasn't being definite about those facilities as being used in local distribution. That is an expression of opinion there, I mean, I don't have any clear-cut opinion as to what is local distribution. Certain types of facilities, when you describe them, like the facilities for the Holtwood Village, I wouldn't hesitate to call those local distribution.

Q. You say you would hesitate? A. I would not hesitate to call those used in local distribution.

Q. You would not hesitate. You say you would hesitate, however, at least you have had some doubt about the Highlandtown Substation facilities. Is that right? A. Yes, I don't know just whether they would be in a [8779] legal sense, I mean whether this would be considered local distribution or not.

Q. Now just so we understand each other, Mr. Roland, I am not asking you for any legal conclusion or anything in the legal sense. A. Yes.

Q. Can you answer my question as an engineer? A. I don't know whether they would be or not.

Q. You are sure that they are distribution facilities? A. I would agree that they are distribution facilities.

Q. Were you aware of the Holtwood Village facilities when you gave your testimony back in April or May, whenever it was? A. Yes, I was aware of it.

Q. How would you class the facilities used to render service to the Pioneer Electric Light Company area adjacent to Holtwood?

MR. GOLDBERG: What service does counsel have reference to?

MR. MYSE: Well, I described that as the service to the Pioneer service area adjacent to Holtwood.

MR. GOLDBERG: What is the service?

MR. MYSE: I am asking him how he would classify it.

TRIAL EXAMINER: Can you classify it?

THE WITNESS: I believe that those were definitely [8779-A] distribution facilities. Whether or not they would be used in local distribution, I don't know. I didn't examine the facilities owned by the Pennsylvania Power and Light Company that were used, I mean in their area for distributing that energy. All I had in mind was that Penn Water owns the step-down transformers for serving that area.

MR. MYSE: And certainly there is no transmission of any length or of any kind, is there?

THE WITNESS: I don't believe so.

By MR. MYSE:

Q. So that if it is anything it is a distribution facility so far as Penn Water owns facilities? A. Well, Penn Water does not own the distribution lines. They furnish the transformers, I mean for stepping the voltage down to distribution voltage.

Q. But to the extent it does own the facilities they are distribution facilities, is that right? A. Yes, I think I

would call those transformers, small transformers, distribution transformers.

[8780] Q. Mr. Roland, I think earlier this morning you mentioned the Gunpowder transmission facilities owned by Penn Water, and by that I mean Penn Water or Susquehanna Transmission Company? A. That is right.

Q. In this case that line is owned by Susquehanna. Is that right? A. That is correct.

Q. Now, you stated, as I remember it, that that line is not used to transmit energy across state lines. Is that right? A. I made no effort to determine whether it did or not, but that is my offhand opinion, I mean that it does not.

Q. Well, will you briefly describe that line, where it originates, where it runs to, and what use is made of it? A. Well, one of the terminal points is the Baltimore Company's Park Road substation.

Q. Philadelphia Road, I believe. A. Philadelphia Road substation. The other terminal point, I believe, is the Gunpowder substation, which is a substation on the 110 K. V. loop around the City of Baltimore.

Q. Now, that line has no direct connection with the so-called Highlandtown line running from Holtwood to [8781] the Baltimore Company, does it? A. Certainly not a direct connection, no. The 25-cycle system is tied in with the 60-cycle system, by means of frequency changers, and through that way it would be connected but there is no direct connection.

Q. There is no electrical connection between the 25-cycle and the 60, is there? A. At a frequency changer you break the electrical connection and have a mechanical connection.

Q. So there is no electrical connection between the two systems—right? A. In that sense that is correct.

Q. And as I understand your evidence, then, that Gunpowder transmission line is used as a part of the Baltimore

Company's distribution system in Maryland. Is that right?

A. I don't know where to draw the line between distribution and transmission. If that 110 K. V. loop is considered distribution then it would be a part of the distribution system. If it is considered as a transmission system, then it is part of the transmission system.

Q. Well, at least you would agree it is used exclusively as a part of the Baltimore Company's system in Maryland whether we characterize it as distribution or transmission system? [8782] A. That is correct.

Q. To that extent then, it would be a facility used only for the transmission of electric energy not transmitted from a state and consumed at any point outside thereof? A. That is correct.

Q. I think at various places in your testimony, and you repeated this morning, you said that that line was leased to Baltimore. Am I right in so understanding your testimony?

MR. GOLDBERG: Will you point to the places where he said it was leased?

MR. MYSE: One is at page 909 of the transcript, line 5, and I think he repeated it this morning.

By MR. MYSE:

Q. Let me ask you first at transcript 909, line 5, you were referring to the Gunpowder line when you talked about the line leased to Baltimore? A. That is correct.

Q. Now, what did you mean by "leased to Baltimore Company"? A. Well, the line was built at the request of the Baltimore Company and for the use of the Baltimore Company. It was used exclusively for the Baltimore Company service.

MR. MYSE: May we have the answer, please?

(Answer read.)

By MR. MYSE:

[8783] Q. Well, does Baltimore operate and maintain the line? A. I don't believe so. I think that Susquehanna

maintains the line and maintains all the other lines because it is on the same right of way as the other transmission lines owned by Susquehanna.

Q. Does Baltimore make any compensation for this lease that you referred to? A. I don't know.

Q. Have you ever seen any document which looked like a lease of these facilities from Penn Water or Susquehanna to Baltimore Company? A. No.

Q. Isn't it a fact that the compensation that Penn Water receives for these facilities is included in the contract referred to in this proceeding as "H and I"? A. I don't know.

Q. Didn't you study that contract? A. I studied it but I don't recall now just how ten miles of line was handled.

Q. Well, are you familiar with H and I? A. Well, I couldn't precisely remember any details of it. I am generally familiar with it.

. . .

[8785] By MR. MYSE:

Q. Is the Exhibit C of Item H what you had reference to when you are talking about a lease, leased facility from Penn Water to Susquehanna to Baltimore? A. Well, Exhibit C would indicate that it was not a lease, that Baltimore Company was paying a part of the average annual cost of the operation and maintenance of the line.

. . .

[8787] By MR. MYSE:

Q. Now, can you summarize for me what facilities Penn Water or Susquehanna owns, either one, which are used for the transmission of electric energy not transmitted from a state and consumed at any point outside thereof?

THE WITNESS: Will you read the last part of that?

(Question read.)

**THE WITNESS:** We are discussing now transmission facilities?

**By MR. MYSE:**

**Q.** That is right. **A.** Gunpowder line would be one. That is the only one I can think of now other than these facilities, which we have talked about as being distribution facilities.

**Q.** Well, isn't it a fact that the transmission line, let's take from Holtwood to York, is also a transmission line used for transmission of electric energy not transmitted from a state and consumed at any point outside thereof? **A.** No, that isn't; no.

**Q.** You mean there is no energy that goes on that line that is generated in Pennsylvania and consumed in Pennsylvania? **A.** Well, wait a minute. It is not used exclusively for either one.

**MR. MYSE:** Will you read back my previous question?

(Previous question read.)

[8788] **By MR. MYSE:**

**Q.** Do you want to change your answer? **A.** It does both. At times it transmits energy which is generated in Maryland. At other times it transmits energy which is generated in Pennsylvania.

**Q.** At times it transmits energy generated in Pennsylvania and consumed in Pennsylvania, and that is the only State in which that energy is generated.

**MR. GOLDBERG:** When?

**MR. MYSE:** At times.

**THE WITNESS:** There are times when the energy transmitted by the line to York is transmitting energy generated only in Pennsylvania.

**By MR. MYSE:**

**Q.** Now, that would also be true with the line that runs from Holtwood to Coatesville? **A.** That is right.

Q. Would it also be true with respect to the line that runs from Holtwood to Safe Harbor? A. That is correct.

Q. And that would also be true with respect to part of Conestoga sub-station? A. That is correct.

Q. And there may be times when the transmission line from Safe Harbor to Perryville, portions of it at least, are used for the transmission of energy generated solely in [8789] Pennsylvania. Is that right? A. That is correct.

Q. Now, that would also be true with respect to some of the facilities of Safe Harbor which conduct energy and other services from Safe Harbor to Conestoga, for example? A. This question was some questions back. Now, let's see—we are saying that there are times when the energy transmitted by Safe Harbor's facilities is energy which is generated in Pennsylvania only.

Q. And consumed in Pennsylvania. A. And consumed in Pennsylvania only. I am not so sure about that because the Safe Harbor generation would be going to Perryville most of the time, and that, of course, would then be consumed in Maryland.

Q. Well, isn't some of the Safe Harbor generation single phase, 25 cycle, used in Pennsylvania? A. Yes.

Q. It is used for railroad purposes in Pennsylvania. A. That is right.

Q. And it is conducted through the Conestoga sub-station. A. That is correct.

Q. It has to go that way. A. That is right.

Q. And there are times when the only energy on that [8790] line is energy generated in Pennsylvania. Isn't that right? A. That is correct.

Q. And it is consumed in Pennsylvania, too? A. Well, that is where I am not certain about it, because some of it necessarily goes to Perryville and the rest of it would then take you to Maryland and some of it is consumed in Pennsylvania.

[8799] Q. Isn't it a fact, Mr. Roland, that under that contract, Exhibit No. 72, energy delivered to M. E. Company for peak use is never delivered at times of backfeed energy generated in Maryland? A. I don't know.

Q. You made no study to determine that, did you? A. No. I studied the flows as shown on Exhibit 42 and whatever they showed, that was it. I didn't study that in relation to the contracts.

Q. Well, if you studied the flows today, wouldn't it be the fact that energy delivered to M. E. Company, that is Metropolitan Edison Company, for peak use is never delivered at times of backfeed energy generated in Maryland?

A. I don't know. I would have to go back and refresh my memory on the terms of the contract. Maybe that would be so, but there may be times when there is not peak use. There would still be energy sold.

Q. Well, if what I say is correct, however, that changes the situation materially from what existed in 1944 under the old contract identified as Exhibit 71, doesn't it? A. The contract would be quite a bit different, yes.

Q. And the flow of energy under the contract identified as Exhibit 72 would be quite different, wouldn't it?

A. I don't know.

Q. You made no study to determine it? [8800] A. I did not. I studied the flows in 1944.

Q. Now, certainly you will agree, wouldn't you, Mr. Roland, that some energy delivered to the Pennsylvania customers is delivered at times when there is only generation at the Safe Harbor-Penn Water Plants?

MR. GOLDBERG: Let's have that question, please?

— (Question read.)

MR. GOLDBERG: What Pennsylvania customers do you have reference to?

MR. MYSE: Pennsylvania Power and Light, Metropolitan Edison Company, Philadelphia Electric Com-

pany at Coatesville, Pennsylvania Railroad Company in Pennsylvania.

MR. GOLDBERG: Now, I would like to have the question reread again.

(Question read.)

THE WITNESS: I don't understand that. Only generation at Safe Harbor and Penn Water? I don't follow you. There is generation all over the system, not necessarily only there.

By MR. MYSE:

Q. Well, let's change the question slightly and say that you must agree, Mr. Roland, that there are times when the energy delivered to the Pennsylvania customers we have named was generated in Pennsylvania? A. Yes.

Q. And that there are times when there is no mixture of [8801] energy generated from without the State of Pennsylvania. A. That is right.

TRIAL EXAMINER: You are referring there to generation in Pennsylvania by Safe Harbor and Holtwood?

By MR. MYSE:

Q. That could be, could it not, Mr. Roland? There could also be generation by some of the Pennsylvania customers at the same time deliveries are taking place? A. That is what I had in mind that you were talking about deliveries to Penn Water from its northern customers and also generation at Safe Harbor and at Holtwood.

Q. It is perfectly possible to have deliveries to Philadelphia Electric, for example, at Coatesville, Pennsylvania, at the same time that Penn Water or Safe Harbor or both are receiving energy from Pennsylvania Power and Light Company. Isn't that right? A. That is right.

Q. Do you have any idea as to the amount of such hours during which all of the energy delivered to the Pennsylvania customers we have named is generated in the State of Pennsylvania?

MR. GOLDBERG: What period of time; what year?

MR. MYSE: Well, let's take 1944, the year you were talking about.

THE WITNESS: Well, one could get some idea of it from [8802] the 20-days I selected, but I didn't attempt to go through and determine the number of hours that that would occur.

By MR. MYSE:

Q. Would you say that those hours are substantial in relation to the total number of hours in the year?

MR. GOLDBERG: What does counsel mean by "substantial"?

MR. MYSE: I think the witness knows. He hasn't protested.

MR. GOLDBERG: I ask what counsel means by "substantial"?

TRIAL EXAMINER: The witness may answer the question.

THE WITNESS: Let me get it. Are the number of hours substantial when the supply to the Pennsylvania customers is generated in the State of Pennsylvania?

By MR. MYSE:

Q. And no other place. A. And there is no comingling so to speak with energy generated in Maryland. Is that what you have in mind?

Q. That is right. A. I would say that the number of such hours would be substantial.

Q. Now, what do you mean by substantial—and I might refer you to line 17 of page 979 of your transcript as constituting your direct testimony? A. What line.

MR. GOLDBERG: Are you referring to that question that [8803] spoke about the amounts of electric energy rather than time?

MR. MYSE: Yes, but he used the word "substantial" and I want to know whether he uses it now in the same sense he used it then and if so what does he mean by it.

THE WITNESS: Well, one cannot be too definitive about a word like substantial. I can't reduce it into terms of percentage. I don't know whether I can use a word that would convey what I have in mind any more adequately than the word substantial. It could be over quite a wide range and still be substantial.

By MR. MYSE:

Q. Well, let's take the other side of it, then. Wouldn't it be a fact that only a small proportion of the kwh's of energy delivered to the Pennsylvania customers we have named are delivered at times when electric energy is transmitted from Maryland and received by Safe Harbor or Penn Water?

THE WITNESS: I will have to have that one again.

(Question read.)

MR. GOLDBERG: What does counsel mean by "small proportion", Mr. Examiner?

MR. MYSE: I think if the witness can answer the question I would like to have the answer.

TRIAL EXAMINER: All right.

THE WITNESS: We are talking now over the period of a year [8804] or something like that?

By MR. MYSE:

Q. Yes, the year that you took, 1944. A. There would certainly be fewer hours during the year when energy was coming up from Maryland to Safe Harbor and Penn Water for transmission to these Pennsylvania customers than there would be hours when all of it was generated in Pennsylvania.

Q. Now can you answer the question? A. Well, in order to give you something very definitive of course you would have to study the thing hour by hour for the entire year, but that would be my opinion that relatively the hours when you had energy coming from Maryland would be very much smaller than the number of hours during which it was generated in Pennsylvania.

Q. Well, maybe we can shorten this. You haven't made any such study? A. I haven't made any hour by hour study for the entire year, no.

Q. You just took selected days you testified to on direct. A. That is correct.

[8808] Q. Well, you have made an investigation of the flows of energy on the Penn Water and Safe Harbor system haven't you? A. Yes, but I didn't go into net hourly flows.

Q. What are your figures based on other than net hourly? A. Gross flows.

Q. Gross? A. Yes.

Q. Kwh? A. Yes, in most instances.

There were a few cases where I netted, where I got the net flows in some of the circuits for certain hours.

[8829] Q. Actually, Article II of Exhibit 10 provides that "the amount of power and energy, hereinafter referred to as 'contractual supply', which Railroad Company shall call for and which Electric Companies shall supply when called for by Railroad Company is defined", and then it goes on to define it, doesn't it? A. That is right.

Q. And what are "Electric Companies" as used in this contract, do you know? A. I suppose they are named in the beginning.

Q. Well, actually the Consolidated Gas Electric Light and Power Company of Baltimore, Pennsylvania Water and Power Company, and Safe Harbor Water Power Corpora-

tion are [8830] hereinafter jointly referred to as "Electric Companies." A. That is right.

Q. So that when it speaks of the supply to the railroad it speaks of the supply by all three, does it not?

THE WITNESS: What Mr. Myse has stated is so stated in the contract.

By MR. MYSE:

Q. That is your interpretation of it, too, isn't it? A. Safe Harbor physically supplies energy to the [8831] railroad.

Q. And it is obligated to under the contract?

TRIAL EXAMINER: You didn't use this contract in making your determination?

THE WITNESS: I did not.

TRIAL EXAMINER: You did not refer to the contracts in your preparation of your testimony on direct?

THE WITNESS: I did not refer to the contracts, as I recall, on direct; certainly not to the railroad contract. I believe I did mention contracts, that certain sales were made under certain contracts, the Penn Power and Light Company and Metropolitan Edison, and so forth, and I also mentioned that Pennsylvania Water and Power was selling—

[8833] THE WITNESS: The question being, is Safe Harbor obligated to supply power to the Pennsylvania Railroad under Exhibit Ten, is that correct? I don't know.

[8834] MR. MYSE: You did refer to sales to the railroad company by Baltimore, did you not?

THE WITNESS: I did make such a reference. The sales in the state of Maryland are the obligation of the Baltimore Company and the sales in the state of Pennsylvania are the obligation of Penn Water Company.

By Mr. MYSE:

Q. Now how do you determine what those obligations were? A. I was so advised by Mr. Spaulding. My discussions with him that the Pennsylvania Railroad requirements of—In the state of Pennsylvania are considered as being supplied by the Penn Water Company, and the requirements of the railroad company in Maryland are supplied by the Maryland Company. Now, physically that doesn't always take place.

. . .

[8836] Q. As I understand it, then, your conclusion as evidenced by the testimony on page 914 with respect to the sales to the railroad company is not entirely your conclusion then, is that right? A. Of course it is my conclusion. It was a matter of discussing it with Mr. Spaulding, Mr. Davis, and other sources.

Q. I am trying to find out how you arrive at that conclusion. How did you arrive at the conclusion that the obligation of Baltimore was to sell to the railroad company only in Maryland? A. I didn't say that.

Q. Then I understand that it is not its obligation; is that right? What other obligation does it have to the railroad? A. It supplies power to the railroad but it doesn't necessarily all have to be consumed in Maryland.

[8837] Q. Well, can you answer my question? What other obligations does Baltimore have other than supplying energy to the railroad in Maryland? A. There are all kinds of obligations.

Q. What are they? A. Sells power in Baltimore to all its customers.

. . .

**THE WITNESS:** They supply power in the city of Baltimore. They have got obligations of all kinds.

**MR. MYSE:** Let's confine ourselves to the Pennsylvania Railroad. What other obligations are there other than the obligation you mentioned of supplying the railroad service in Maryland?

**MR. GOLDBERG:** Mr. Examiner—

**THE WITNESS:** I didn't say that. I said that they supplied power to the railroad. Now this does not necessarily mean that it is all used in Maryland. They supply part of power requirements in Pennsylvania.

[8838] **MR. MYSE:** Excuse me—

**THE WITNESS:** Likewise Pennsylvania Water and Power Company, it supplies power to the railroad, it doesn't necessarily mean that it is all used in Pennsylvania.

**By MR. MYSE:**

**Q.** Then am I to understand that you mean the obligations of Penn Water and Baltimore respectively are not arbitrarily divided by the Pennsylvania-Maryland line? **A.** As far as requirements are concerned that is true. They just together supply the total requirements.

**Q.** Now, actually the energy supplied to the railroad is 25-cycle single-phase, is it not? **A.** That is correct.

**Q.** And that is a different kind of energy from 25-cycle, three-phase, is it? **A.** The frequency and the phase are different from the other.

**Q.** And it is different from 60-cycle, three-phase, is it not? **A.** 25-cycle is different from 60-cycle, yes. Single phase is different from three-phase.

**Q.** Now where is almost all or most of that 25-cycle single phase energy generated? **A.** Safe Harbor.

**Q.** Where else? [8839] **A.** At Benning, Washington.

**Q.** The amount generated at Benning is generated by PEPCO, is it not? **A.** That is right.

Q. What is the full name of PEPCO? A. Potomac Electric Power Company.

Q. And it is really generated in a converter at Benning, is it not?

MR. GOLDBERG: What do you mean by "really generated"?

MR. MYSE: Actually generated.

MR. GOLDBERG: What do you mean by actually generated?

MR. MYSE: If the witness knows I would like to have his answer.

THE WITNESS: The 25-cycle is generated by a frequency changer located at Benning Station.

By MR. MYSE:

Q. And the amount of such generation at Benning is relatively small, isn't it? A. As compared to the total, I believe that is correct.

Q. Now, isn't it also true that a substantial portion of the backfeed from Baltimore received at Safe Harbor is also converted at Safe Harbor from 60-cycle to 25-cycle and used for supply of the railroad? A. At times, some of the backfeed is converted to 25-cycle for use of the railroad.

[8840] Q. And if you refer to your Exhibit 44 again, perhaps we can trace that a little bit better. Now, that Exhibit 44 shows, as I understand it, and you correct me if I am wrong, 67,000 kilowatt-hours backfeed from Baltimore over the 220 kv circuits; is that right? A. I think it would be better if you said kilowatts. This is for one hour.

Q. All right. A. 67,000 kilowatts; other than that, it is all right.

Q. That is kilowatts for one hour. A. Well, it is kilowatts; it is kilowatt-hours for one hour.

Q. It is integrated kilowatt-hours for one hour. A. Well, the kilowatts are integrated over an hour, which gives you—

Q. (Interposing.) And you could integrate it for fifteen minutes or five minutes? A. Yes.

Q. It is frequently integrated over fifteen minutes? A. That is correct.

Q. What is it called when it is integrated over fifteen minutes? A. Well, that would be called a kilowatt demand integrated over a fifteen-minute period.

[8841] Q. Well, in any event, getting back to Exhibit 44, as I understand your correction to my question, there are 67,000 kilowatts transmitted from Baltimore over the 220 kv circuit, sixty cycles, during the hour shown on that exhibit. A. Yes.

Q. And that is received at Safe Harbor, is that correct? A. Yes.

Q. And there is no generation at Safe Harbor so there must be some 23,000 of those 67,000 kilowatts converted, is that right? A. That is correct.

Q. And after it is converted, where does it go? A. It all goes to the Conestoga substation.

Q. And from there it is used in the railroad service, is it not? A. That is correct.

Q. Now, in order that we may understand your Exhibit 44, the converter is shown by the sign of the two balls there, is it not? A. That is right.

Q. Shown connecting the two busbars at Safe Harbor, isn't that right? A. That is right.

[8842] Q. Now, some of that backfeed converted at Safe Harbor may be used in Maryland again? A. Yes.

Q. And that may be the case especially when there is a good deal of backfeed and no generation at Safe Harbor, isn't that right? A. That is right.

Q. Will you refer to page 914 of the transcript again, please. Now, at lines 13 to 14 you testified that Holwood

delivers energy to the railroad at Conowingo and Perryville, [8843] Maryland, "for the account of Baltimore Company."

Now, what did you mean by that phrase that I quoted? A. Well, the delivery to the railroad company at that point, that is at Perryville, for service south of Perryville, is considered a sale by the Baltimore Company to the railroad.

Q. Where did you—what evidence did you use in arriving at that conclusion? A. Oh, well, my recollection is that I discussed that with Mr. Von Eiff.

Q. When did you discuss it with Mr. Von Eiff? A. Oh, it would have been the last half of 1945.

Q. Did he write you a letter about it? A. No.

Q. Was that the only basis you had for using that phrase? A. I don't know whether anyone ever used that phrase; that is my own phrase. I think that is the one commonly used under similar circumstances, where you deliver energy at the point, and at that point the sale is actually made by somebody else, you make the delivery for the account of the person that does the selling.

Q. Now, you say that the sale is made by somebody else at Perryville, and Conowingo other than Holtwood. Who is that sale supposed to be made by? [8844] A. Baltimore.

Q. What led you to that conclusion, what evidence? A. Deliveries in Maryland; I mean deliveries to the railroad company, for use in the State of Maryland are treated as sales by Baltimore Company to the railroad.

Q. Let me understand what you mean by sale in that connection. Will you explain it for me? A. The energy in this case is delivered by Penn Water; the payments for that energy consumed in Maryland is made to Baltimore Company.

Q. You mean the payment by the railroad? A. Yes.

Q. Made to Baltimore? A. Yes.

Q. That is also true for the energy delivered to Pennsylvania, the payment is made by the railroad to Baltimore,

isn't it? A. Yes, knowing that Baltimore, I mean, is supposed to pay the other, the Penn Water Company share to Penn Water.

MR. MYSE: May I have the last part of the answer.

(The answer was read back.)

By MR. MYSE:

Q. How do you know that? A. I think I learned that from conversations with [8845] these same people that I have been talking to you about, Mr. Von Eiff, Mr. Spaulding; that is my recollection of that.

Q. Is that the only basis then that you have for making that statement? A. That the Baltimore Company collects the entire bill for railroad service, and then it, in turn, compensates the Penn Water Company for deliveries to the railroad in Pennsylvania?

Q. No, I was referring to your statement that it is supposed to pay part of the compensation received from the Pennsylvania Railroad Company to Penn Water. A. I don't know whether any actual check, I mean, is transferred from one to the other; but for billing purposes, I mean, the part that is sold in Maryland is considered a sale by Baltimore, and sales in Pennsylvania are considered a sale by Penn Water; the money paid by the railroad is split up accordingly.

Q. I don't believe that you have answered my question, although you can start over again.

As I understand you, you said that the sale by Baltimore in Maryland was a sale because energy was delivered and Baltimore received the payment therefor, is that right? A. Yes, but it is used by the railroad in Maryland, [8846] which is considered a sale by the Baltimore Company.

. . .

Q. Now, as I understand it, however, you say that there is a sale by Penn Water in Pennsylvania even though it doesn't receive payment from the Pennsylvania Railroad

Company. A. Not directly; it doesn't receive payment directly.

Q. So that when it receives what you call an indirect payment, that makes a sale, is that right? A. Well, the railroad company, I suppose, could make out two checks, give one to Baltimore Company, and one to the Penn Water directly. As I understand it, it compensates the Baltimore Company only, which in turn, compensates the Penn Water Company.

[8847] TRIAL EXAMINER: Answer the question, Mr. Witness.

THE WITNESS: To be a sale there has got to be the compensation.

By MR. MYSE:

Q. But there is no compensation from the railroad to Penn Water, is there? A. Oh, well, that is a matter of convenience; there is compensation; I mean it is for some purposes, I mean, by the railroad company; the Baltimore Company is handled in that particular way; there is compensation.

Q. Well, you consider that a sale from Penn Water to the Pennsylvania Railroad even though there is no direct payment from the railroad to Penn Water? A. I consider it a sale because Penn Water makes deliveries and it receives compensation therefor.

Q. So, under your theory it makes no difference from whom they receive the compensation, is that right?

[8848] THE WITNESS: Compensation would be made by the purchaser. Now, you might make it directly or he might make it indirectly.

By MR. MYSE:

Q. What do you mean by compensation made indirectly by a purchaser? A. Well, as I stated, as a matter of

convenience instead of making out two checks they make out one, and in the way of billing arrangements as they are between Penn [8849] Water Company and Baltimore Company that seems to be a practical way of doing it.

Q. Mr. Roland, it is more than a mere matter of convenience; it is a provision in exhibit ten, the contract. A. Well, it is still a mere matter of convenience.

TRIAL EXAMINER: State your question again.

By MR. MYSE:

Q. There is a provision in the contract requiring that all payments be made to Consolidated Gas Electric L & P Company of Baltimore. Doesn't that provision say that? A. I don't recall that there is a provision like that in there or not. But even if it was in there it would be for the same reason, that it is a matter of convenience.

[8850] MR. MYSE: As a matter of fact, the contract in Article XI requires that the payments be made to Consolidated Gas Electric L & P Company of Baltimore, doesn't it?

[8851] A. Is it required? Yes.

[8855] Q. So there you spoke of the deliveries by Holtwood to the railroad as deliveries to the ultimate consumer. Is that right? A. The railroad company is an ultimate consumer and that is what I had in mind.

[8858] Q. Mr. Roland, will you refer to page 911 of your direct testimony? The reference is line 13 through 19. There you spoke of sale of interchange power to Philadelphia Electric Company. Is that right? A. That is right.

Q. And again at page 929, you testified with respect to the deliveries, the interchange deliveries by Holtwood to Philadelphia Electric Company. Is that correct? A. Yes.

Q. And these deliveries are made actually to the Pennsylvania Railroad Company, are they not? A. To the facilities of the railroad company, yes.

Mr. MYSE: May I have the answer, please?

(Answer read.)

By Mr. MYSE:

Q. Well, the energy is used by the railroad company in running its trains up and down the line north and south of Perryville, is it not? A. That is my understanding. I don't know whether any of the energy supplied at that point gets up beyond the railroad and back into the Philadelphia Electric system or not.

. . .

[8868] By Mr. MYSE:

Q. Now, at certain places in your direct testimony you testified with respect to electric energy receipts by Penn Water, and I refer to one place, to be specific, at lines 15 through 20 at page 906, if you care to look at that.

Mr. GOLDBERG: May I have those pages again, please?

Mr. MYSE: Lines 15 through 20, page 906.

Now, in addition to the companies that you listed there at page 906, does Safe Harbor receive energy from Potomac Electric Power Company?

Mr. GOLDBERG: What was that question?

Mr. MYSE: I meant P. W., rather.

Mr. GOLDBERG: Instead of Safe Harbor the question should be Penn Water?

Mr. MYSE: Yes.

THE WITNESS: Does Penn Water receive energy from PEPCO?

Mr. MYSE: Yes.

**THE WITNESS:** There may be times when PEPCO is feeding into the railroad facility at Benning that it is more than enough to satisfy the railroad requirement between there and Perryville. Some of it may back up to Conestoga.

**By MR. MYSE:**

**Q.** Isn't it also true that at times there is energy [8869] received by Penn Water on the 220 kv circuits from PEPCO? **A.** Well, yes, if you talk of it being received directly from the facility of PEPCO, yes. What I had in mind there was that it was received from Consolidated because the purchase was made by Consolidated.

**Q.** Then you weren't talking about physical receipts in that testimony at page 906. Is that my understanding? **A.** That understanding correct? **A.** The question was from what companies do they receive it?

**Q.** That is right. Isn't it a fact that physically Penn Water receives energy from PEPCO at times? **A.** There is a transfer of energy from the facilities of PEPCO directly to Susquehanna.

**Q.** So your answer should be amended accordingly, shouldn't it? **A.** If we change the understanding of that, yes. If we are talking about the physical transfers from the facilities of one company to another, the answer should be amended to include PEPCO.

**Q.** Well, what did you mean when you used the words "receive electric energy"? **A.** I had in mind receiving from what company, and they do receive it from the Baltimore Company. The sale is made by PEPCO to Baltimore, and therefore I consider that [8870] as being received from Baltimore.

**Q.** Then do I understand your answer on page 906 to be limited to cases of receipt of electric energy when there is also a sale of that energy? Is that right? **A.** I think that my answer would so limit it, yes.

**Q.** It didn't show in your answer, and you want to amend it now to show that. Is that right? **A.** I think

that answer could be amended to include PEPCO. I think that would be perfectly proper.

Q. Then as I understand you you are making your answer mean that you are dealing with physical receipts of electric energy. Is that right? A. I am doing it now. From your questioning I think that it would be all right to add PEPCO there the way the question is stated on page 906.

Q. Now, as I understand your testimony over the last few minutes, then, the receipt of energy is not the same thing as the purchase of energy. Is that right? A. The receipt of energy doesn't necessarily have to be a purchase of energy, that is true.

Q. Now, the interchange energy which Penn Water received from, let us say, Pennsylvania Power and Light Company and Metropolitan Edison Company is available for use for any loads that Penn Water may have at the time, isn't it? [8871] A. Yes.

Q. And it can also be used to take care of any Baltimore load it may have at the time? A. Yes.

Q. And even if the energy so received never gets down to Baltimore, it makes available to Baltimore by the receipt of that energy a certain amount of additional energy to Baltimore. Is that right? A. If Holtwood has some definite requirement to meet in Pennsylvania and a part of it is supplied from a Pennsylvania customer, obviously there would be more left over for Baltimore.

[8873] By MR. MYSE:

Q. You don't know what a charge for service is? Is that your answer? A. A charge for service—I presume what you have in mind is so many mills per kilowatt hour or so many dollars per kilowatt of demand.

Q. Well, those things that you mentioned would be a rate for service, wouldn't they? The charges per unit?

A. Well, it results in a charge. Q. That is you take the total units and multiply it by [8874] the rate and you come

out with a charge for service. Isn't that right? A. Isn't that what you had in mind?

Q. I am asking you is that what you mean? A. It results in the charge. If you apply the rate you get a charge.

Q. So if you apply a charge per unit, whether it be kwh or mkw, or kw, and multiply it by the number of units you get a charge for the service, a total charge. Is that right? A. Yes, that would result in a total bill or charge, whatever you want to call it.

Q. What is your understanding of electric demand?

• • •

THE WITNESS: Well, demands are measured by the demand meter or a watt hour meter integrated over an hourly period.

The demand is the measure of the rate at which the energy is being delivered or sold, usually expressed in kilowatts or kilowatt hours per hour.

[8875] By MR. MYSE:

Q. Well, do you think it is fair to state that an electric demand is the load at the receiving terminals over a specified interval of time and that demand is expressed in kilowatts, kva, amperes, or other suitable units?

• • •

THE WITNESS: Yes, you could measure the demand in kilowatts or kilovolt amperes.

By MR. MYSE:

Q. My question was, was that a fair definition of demand?

MR. GOLDBERG: Would you like to have it read again?

THE WITNESS: No, I think I understand it. The word "load" itself, of course, is demand in a sense.

MR. MYSE: Can't you answer my question, Mr. Roland?

THE WITNESS: I think that definition would be satisfactory.

By MR. MYSE:

Q. As a matter of fact, it appears in the Federal Power Commission's glossary of terms, does it not? A. I don't know. You were reading it.

[8876] Q. Isn't that correct on page 7? A. That is what I said I thought it was, a satisfactory definition.

Q. I don't think your answer was quite responsive. It does appear on page 7, does it not? A. I will take your word for that.

Q. Well, I don't want you to take my word for it.

TRIAL EXAMINER: Well, that would be a matter of official notice.

MR. MYSE: I am not so sure in this case, Mr. Examiner.

TRIAL EXAMINER: Well, you mention it to me, and I will take official note of it.

MR. MYSE: I am not so sure that other people might take official notice.

TRIAL EXAMINER: That is the ruling. You don't have to ask the witness what appears in the glossary of the Federal Power Commission.

MR. MYSE: Then do I understand that you will take notice of that specific reference at page 7 that I just read?

TRIAL EXAMINER: Yes.

MR. GOLDBERG: I think we had better have a definite description of the glossary so there will be no question of where it came from.

By MR. MYSE:

Q. Will you describe what I was reading from?

[8877] MR. GOLDBERG: You describe it. The witness doesn't have to describe it. I will accept your description of it.

MR. MYSE: I would like to have some testimony in the record.

TRIAL EXAMINER: Proceed.

MR. MYSE: As a matter of fact, the definition I read came from what is known as the Federal Power Commission glossary of important power and rate terms, abbreviations and units of measurement and was issued in the year 1936.

By MR. MYSE:

Q. Is that right, Mr. Roland? A. That is right.

Q. Now, I think you agreed with me, but I am not sure, that demand could be measured over different intervals of time. That is you could have demand integrated over one hour. Is that right? A. That is right.

Q. Over fifteen minutes? A. That is right.

Q. Generally speaking a fifteen-minute integrated demand might be higher than a one-hour integrated demand? A. It usually would be, yes.

Q. And if you had a five-minute integrated demand it might be higher? A. It would be higher than the fifteen minute demand.

[8878] Q. Why would a fifteen-minute demand, for example, normally be higher than a one-hour demand? A. Well, over a period of an hour you can get a lot of averaging out which you get by integration. During the first half of the hour it might be high and then during the last half of the hour it might be low, and you would average them out. If you take a five-minute period you don't have much time for averaging-out. You catch a peak and that peak may be sustained for five minutes, so you don't have the averaging.

Q. If I can understand that answer as a poor layman, what that means is that in the fifteen-minute demand you

are more apt to get the peaks weighted into your answer than you are in a one-hour demand. Is that it? A. The peaks are not so apt to be balanced out by something lower during the same interval of time.

MR. GOLDBERG: I think counsel is modest. That sounds like a technical understanding.

By MR. MYSE:

Q. Is it fair to say that an electric capacity service is the service furnished by carrying an electric load equivalent to the demand plus whatever reserve is necessary?

THE WITNESS: Can I have that one?

(Question read.)

THE WITNESS: Does that state "Carrying the equivalent [8879] load"?

Q. Carrying the electric load equivalent to the demand.

A. In capacity service you are not probably carrying any of that load. You have the capacity available to carry it, but you are not actually carrying it.

Q. That constitutes service, doesn't it, having capacity available? A. Under certain forms of contracts the supplier agrees to have the capacity available. Under those conditions that would be a part of the service which he would render to the buyer.

Q. Well, wouldn't the company which is taking care of a demand load at the service point be rendering capacity service as well? A. (I don't understand that, I don't believe.

Q. Well, in any event capacity service and demand both are measured by kilowatts, kilovolt amperes, and sometimes hp, aren't they? A. Capacity is measured in terms of kilowatts or kilovolt amperes, and so is demand; yes.

Q. Now, a charge for electric capacity service is referred to either as a demand charge or as a capacity charge, and it is a charge based upon the capacity fur-

nished or the demand in terms of kw or kva without regard to the amount of [8880] energy consumed. Isn't that right? A. That is very often the case, yes.

Q. As a matter of fact, the glossary that I referred to a while back contains such a definition, does it not? A. I don't know.

Q. As a demand charge?

MR. GOLDBERG: Do you want the witness to read the definition into the record?

MR. MYSE: I can read it and ask him if that is correct.

By MR. MYSE:

Q. The glossary at page 7 defines a demand charge as "A component part of a rate schedule which provides for a charge based upon the customer's demand or equivalent, without regard to the consumption of energy." Is that right? A. That is correct.

Q. How do you define electric energy, Mr. Roland, as you used it in your direct testimony? A. Well, electric energy can be defined in qualitative terms. You can say it is something which has the ability to do work. That is a very common definition for energy in the qualitative sense. You can define it in the quantitative sense, the energy of a system is the amount of mechanical work that the system is capable of doing.

You can also define energy in the problem that we are dealing with here as a commodity, something which is bought, [8881] sold and interchanged. I think probably in my studies here that that is the concept that I had more than I did the definition in a quantitative sense or the one I described as being the more qualitative.

Q. Well, speaking of it as a commodity as you have just testified to it, is it something you can put your hands on? A. Some people claim they can. I have never been able to.

Q. Well, I want your opinion, not what some people claim. What do you think? It isn't a commodity in the ordinary sense like buying the table or a hat—

MR. SPARKS: Or Mr. Goldberg's tie.

MR. MYSE: Would you like the question read now?

TRIAL EXAMINER: Read the question.

(Question read.)

THE WITNESS: Certainly energy cannot be related to anything that we ordinarily think of.

By MR. MYSE:

Q. So it is not like the ordinary commodity, then?

A. Physically it is not.

Q. Now, electric energy is measured commercially for billing purposes in kilowatt-hours, isn't it? A. Yes.

Q. As distinct from demand or capacity service which is measured commercially for billing purposes in kw or kilowatts. [8882] A. That is right.

Q. And sometimes measured in kilovolt amperes. A. That is correct.

Q. And sometimes measured in hp. A. Yes.

Q. I take it you would also agree that a charge for electric energy is a charge based upon the amount of kwh furnished. Is that correct? A. Yes.

Q. And again the Federal Power Commission in its glossary of 1936 defines an energy charge as a component part of a rate schedule that provides for a charge based upon the amount of energy consumed. A. That is correct.

Q. That is at page 9. A. That is right.

[8883] By MR. MYSE:

Q. I take it from our previous discussion you would also agree that a rate for electric energy is the price or charge per kwh furnished. Is that right? A. Rate for electric energy?

Q. A rate for electric energy, yes, an electric energy rate as distinguished from the charge. A. A charge per unit of energy?

Q. That is right, per kwh furnished, if that is the unit. Is that right? A. I think that usually is the case, yes.

Q. As a matter of fact, if you went to the Philadelphia Electric Coatesville contract you would find some examples of separate charges for demand, separate charges for capacity service furnished, separate charges for energy, and separate charges for transmission services, wouldn't you? A. I believe that is correct.

Q. Now, are there any such separate specified charges for the services rendered to Baltimore by Penn Water?

[8884] THE WITNESS: I don't believe there are. I don't recall now about separate transmission charges, but I know there are no energy charges or demand charges spelled out.

By Mr. MYER:

Q. Can't you be a little more specific on that? You have examined the contract, have you not? A. Yes, I examined them some time ago for a specific purpose, not including what you were just talking about.

Q. As a matter of fact, it is clear from that contract that there are no such separate specified charges, separate for each of the different kinds of services I have been talking about.

[8885] THE WITNESS: I stated that my recollection was that there were no separate charges for energy or demand. Now, there was some question in my mind about the cost of these facilities, the 220 K. V. lines, but I am not sure about that.

Q. Now, Mr. Roland, I am sorry, but I am not satisfied with your recollection at this time because you made the

direct statement about sales in your direct testimony. I would like to have you be more positive if you can.

[8886] TRIAL EXAMINER: Can you be more positive at this time?

THE WITNESS: I can be more positive about the energy and the demand charge. I am not so certain about the facilities.

By MR. MYSE:

Q. What do you mean by that? A. That there are no special separate provisions for energy charges and demand charges in that contract.

Q. As a matter of fact the charges are based upon expenses without regard to the amount of energy furnished?

A. That is correct.

[8890] MR. MYSE: Whatever charges are made under the presently effective contract after the year 1931 they appear in Article III of that contract, do they not, and that has been gone into extensively in the cross-examination of Mr. Spaulding?

MR. GOLDBERG: Which contract?

MR. MYSE: Items H and I, Article III, 1931 supplement.

THE WITNESS: Is that a question?

MR. MYSE: Yes, that is where whatever charges there are under the contract are specified. Isn't that correct.

THE WITNESS: I would have to look and see. I don't remember the Article numbers.

MR. MYSE: Will you do so?

MR. GOLDBERG: Article III on page 29 of Item H?

MR. MYSE: Yes.

MR. GOLDBERG: Now may we have the question, please?

(Question read.)

THE WITNESS: That Article covers the payment that should be made for electrical capacity and energy which Baltimore Company receives from Penn Water Company.

[8900] Q. Now, what is the difference between metering on a net hourly-basis and metering on a net yearly basis? A. It seemed to me that on a net yearly basis what that would mean would be the difference between the gross transfer in one direction subtracted from the gross transfer in the opposite direction.

[8901] Q. Over a year period? A. Over a year period. Now, the net hourly basis would be the summation of the net transfers during any particular hour over a period of a year, which of course might differ from the net yearly basis. That is, during an hour you may have the flow in one direction for part of the hour and in the reverse direction for the remainder of the hour. The difference between the two would be the net hourly. If you add all those up for each hour of the year you would have the net hourly for the year. That is my understanding.

Q. And the net hourly for the year might be quite different from the net yearly? A. I expect it would, yes.

Q. And if you had a net daily basis, you might get a different figure? A. That is right.

Q. Do you know what is the normal way of accounting for energy for billing purposes, whether it is net hourly, net daily or net yearly?

MR. GOLDBERG: I object, Mr. Examiner, unless the question is confined to the company under study. The question talks about the normal basis. Normal basis for whom?

MR. MYSE: I will accept that amendment, the normal basis for transactions of all these companies we

have been [8902] talking about, that is the Pennsylvania customers, Penn Water, Safe Harbor, Baltimore.

MR. GOLDBERG: Now may we have the question?

(Question read.)

MR. GOLDBERG: Then that is confined to Penn Water?

MR. MYSE: No, it is not confined to Penn Water.

TRIAL EXAMINER: Answer the question.

MR. GOLDBERG: Mr. Examiner, I understood the amendment was—

TRIAL EXAMINER: The amendment wasn't that. The amendment was Penn Water and all involved with Penn Water in these transfers.

MR. GOLDBERG: In connection with Penn Water transactions?

TRIAL EXAMINER: That is right.

THE WITNESS: I believe it was on a net hourly basis.

By MR. MYSE:

Q. Actually, however, backfeed energy when it is billed for and accounted for is billed on a net daily basis, is it not, that is backfeed from Baltimore? A. I don't know.

Q. Well, didn't you examine "H" and "I" on that point? A. No, I did not, not for that point.

Q. Well, at page 912 you testified in your direct that you examined the billings under those contracts, didn't [8903] you? A. I examined the billings.

TRIAL EXAMINER: Before we go any further, explain for me the difference between net hourly, net daily and net yearly, why they differ?

THE WITNESS: Why they were different?

TRIAL EXAMINER: Yes.

THE WITNESS: Well, take Safe Harbor as an example. During part of the year energy during certain hours is transmitted from Maryland to Safe Harbor. Now, that meter, if you read it at the beginning of the year and at the end of the year, for example, you would get the gross amount transferred from Maryland to Safe Harbor. Now, there would be another meter in the circuit which would measure energy transmitted in the reverse direction. If you read that meter at the beginning of the year and the end of the year you would get the gross amount transferred in the opposite direction. If you subtract the two you would get the net yearly transfer.

MR. MYSE: That would be a net yearly figure for an amount of energy?

THE WITNESS: That is right. But if you read these meters at the end of each hour, you may have during one hour a certain amount transmitted towards Safe Harbor and during the balance of the hour it may be transmitted in the [8904] opposite direction. You would net that figure, and then you do that for each hour of the year, which might be quite different from the net yearly figure.

TRIAL EXAMINER: You mean you do it for each of the 24 hours times 365?

THE WITNESS: That is right.

By MR. MYSE:

Q. And if you added up all those net hourly figures for one year, you wouldn't get the same figure as the net yearly?

A. I don't believe you would, no.

TRIAL EXAMINER: Why not?

THE WITNESS: I would have to try to work out an example to try to illustrate it to you. I will try to do that for you after a while.

By MR. MYSE:

Q. Anyway, when you are talking about sales of energy it is important to know what the basis of the metering is, isn't it?

MR. GOLDBERG: Important in what connection, Mr. Counsel?

THE WITNESS: I don't believe it is necessarily important to determine whether or not it is a sale.

By MR. MYSE:

Q. Well, the amount of the sale would depend on how the metering figures are determined. [8905] A. The amount of the sale would depend on meter readings, but whether or not it is a sale you don't need to know all the details of how the billing or metering is done.

Q. But to determine the quantity of a sale you have to know, and it is important to know, the basis of the meter readings, isn't it? A. You would have to know how the meters are read and what they read, yes.

Q. And if one's receipts are not a net yearly basis, you may not get the same thing as if they are on a net hourly basis or a net daily basis, would you? A. That is right.

Q. Now, coming back to "H" and "I", isn't it true that in Article 6 of Item "H" the contract provides—

MR. GOLDBERG: What page are you on?

MR. MYSE: Page 9.

By MR. MYSE:

Q. —the contract provides that billing for backfeed energy from Baltimore shall be on a net daily basis? A. It so states.

[8907] Q. Now, will you refer to Exhibits 38 and 40? We had better have both of them before us. Now, referring to those two exhibits, Mr. Roland, can you tell me what the effect would be on your figures on Exhibit 38 and the picture

on Exhibit 40 if you had included all of the transfers across the Pennsylvania-Maryland line? A. If I had included the transfers across the Maryland line over the 132 kv single phase circuits, it would have increased the amount transferred from Pennsylvania to Maryland, and that would have shown up both in the [8908] tabulation and in the bar chart.

Q. Well, then, as I understand that that would be that if you had shown all of the transfers instead of just part of them, there would be less relative flow shown from Maryland to Pennsylvania. Is that right? A. The flows from Maryland to Pennsylvania remain the same. The flows from Pennsylvania to Maryland would have increased.

Q. Which means that relatively speaking the flows from Maryland to Pennsylvania would be less. A. The flows from Maryland to Pennsylvania expressed as a ratio of the flows from Pennsylvania to Maryland would have decreased.

[8919] A. The question is under what conditions is energy transferred from Maryland to Pennsylvania?

Q. Yes, under what circumstances? A. Well, in operating a steam and hydro electric system where you have a run of river plant such as at Holtwood and Safe Harbor, in order to coordinate the operations of the steam and hydro, the hydro has to be supplemented by steam which usually occurs during off-peak hours. That accounts [8920] for some of the flow from Maryland to Pennsylvania where the hydros shut down during off-peak hours and the steam takes over and carries the load, which means that steam-generated energy from Maryland would be transmitted to Pennsylvania to supply Penn Water's northern customers. A part of the energy transmitted from Maryland to Pennsylvania would be for purposes of interchange with Pennsylvania customers. Under other conditions, emergency conditions to the north, energy may be transmitted from Maryland to Pennsylvania.

Q. Well, first of all the flow from Maryland to Pennsylvania isn't a continuous thing from hour to hour, is it?

A. No. That is when you say "continuous" you mean day in and day out, hour by hour?

Q. That is right. A. That is true, it isn't that.

Q. It only occurs at certain definite periods during the day and during the year. Is that correct? A. I wouldn't say they were very definite. But they occur as required to get coordinated operation of a combined steam and hydro system.

Q. I think you would agree that generally speaking it is during low-flow months of the year that greater amounts of energy in the past, at least, have been transferred from Maryland to Pennsylvania. Is that right? A. That is correct.

[8921] Q. And during the high-flow periods relatively less amounts and sometimes none. Is that correct? A. That is right.

You didn't finish your statement, though, I don't believe, Mr. Myse.

MR. MYSE: Let's have the question and answer, then.

(Question and answer read.)

By MR. MYSE:

Q. I believe I did finish my statement. A. Relatively less amounts of what?

Q. Of energy. A. Doing what?

Q. Flowing from Maryland to Pennsylvania. A. O. K., now the statement is complete.

Q. Now, along that same line, Mr. Roland, you understood me when I referred to the low-flow and high-flow in those questions I was referring to river flow? A. Yes.

Q. Now, that variation may also take place during the day, during different hours of the day. Isn't that correct? A. Which variation?

Q. The variation of flow of energy from Maryland to Pennsylvania? A. They vary throughout the day?

Q. Yes. [8922] A. Certainly.

Q. And usually the greatest flow I think you said was on off-peak hours. Is that correct, the flow of energy, I am speaking of? A. Yes, that is right.

Q. And that is a flow of energy from Maryland to Pennsylvania, we are talking about? A. Yes.

Q. Do you know whether there is ever any backfeed from Baltimore at times of peak on the Holtwood or Safe Harbor system? A. At time of peak—you are referring to the system annual peak?

Q. No, daily peak. A. I only studied hourly flows for 20 days, so I couldn't tell you as to what may have occurred at other times during other days. That is not the plan of operation, however. It is for the hydros, of course, to produce a maximum during a time of peak, and ordinarily that would result in flows from Pennsylvania to Maryland.

Q. So there would be no flows from Maryland to Pennsylvania at the time of the daily peak. A. I can't say whether it has actually occurred, but the mode of operation, I mean, would indicate that it would be unlikely that the flow would be from Maryland to Pennsylvania [8923] during time of peak.

. . .

[8925] Q. Now, I don't know whether you mentioned it or not, but some of the circumstances surrounding the flow of energy from Maryland to Pennsylvania should include, should it not, the furnishing of service to the Pennsylvania Railroad? A. That is part of the load, yes.

Q. And the amount of the Pennsylvania Railroad taken care of by deliveries from Safe Harbor by Conestoga substation via Perryville, depends upon the load on the railroad in both Maryland and Pennsylvania, does it not? A. Yes.

. . .

[8927] Q. Now, I refer you to page 946 of the transcript, lines 5 through 8, where you stated that December 11, 1944, was designated because it was the day when the system peak load of the year occurred on the Safe Harbor-Holtwood-Baltimore power pool. Did you there have reference to the Area 6 system peak day? A. I believe that is correct. I would have to go back and check the Form 12 report.

Q. I think I have one here if you will use my photostat. Do you know where to look in it? A. Yes. I would want to see the report for the interconnected system.

Q. You mean the Consolidated Company power system statement, F. P. C. Form No. 12. Is that what you are looking at? A. The Form 12 report filed by the Baltimore Company for the combined Holtwood-Safe Harbor-Baltimore, Bethlehem Steel and Washington systems.

Q. Will you tell me, Mr. Roland, after referring to the Consolidated F. P. C. Form No. 12 for 1944, what the Area 6 system peak day and hour was? [8928] A. It was the hour ending 6 P. M. on December 11, 1944.

Q. Now, as I understand it, the Area 6 system means what? Let's have it for the record again so we are sure we know what we are talking about. A. The Area 6 systems include the Holtwood, Safe Harbor, Baltimore, Bethlehem Steel and Washington systems.

Q. Now, if you looked at the Holtwood-Safe Harbor system alone you might get a different day of peak or hour of peak, would you not? A. For the Holtwood-Safe Harbor system?

Q. Yes, alone. A. Yes.

Q. Can you tell me what that was for 1944 by referring to the Penn Water F. P. C. Form 12 for the year 1944? All I was asking for was the day and the hour. A. The date is April 19, 1944, and the hour is the hour ending 8 A. M.

MR. GOLDBERG: That is the same information that is on transcript 946, isn't it?

MR. MYSE: Yes, except for the hour.

By MR. MYSE:

Q. Isn't that correct, Mr. Roland? A. That is right.

Q. Now, referring to Exhibit 42 page 20 and the line showing the figures for the hour ending 6 P. M., which as I [8929] understand it now, is the Area 6 system peak hour for 1944, will you tell me the total amount of KWH delivered to Baltimore Company from Holtwood and Safe Harbor during that hour by reference to that line, if you can? A. During that hour 88,000 kilowatts was delivered to Maryland over the 220 K. V. circuit.

Q. And that is shown by what column? A. That is shown in column 7. During the same hour, 54,000 kilowatts was delivered to the Baltimore Company at Highlandtown, Maryland.

Q. That is shown by what column? A. That is shown in column 41.

Q. Now, let me interject a moment. The 88,000 kw is 60-cycle energy, is it not? A. That is correct.

Q. And the 54,000 kw is 25-cycle? A. That is right.

Q. Now, that makes a total, if my arithmetic is correct, of 142,000 kw furnished during the Area 6 system peak hour over those two lines or three lines, I believe. Is that right? A. The 142,000 is correct.

Q. Now, isn't it a fact that the kw available to Baltimore at the hour of Area 6 system peak in 1944 was greater than 142,000 kw?

[8930] TRIAL EXAMINER: Read the question.

(Question read.)

THE WITNESS: More could have been delivered to Baltimore of the 25-cycle power during that hour. I don't know what the 60-cycle generating capacity was available at that time at Safe Harbor during that hour. They were gen-

erating 146,000. I don't remember now just what the capacity available was.

By Mr. MYSE:

Q. Well, isn't it a fact that the amount of interchange which may have been furnished to the Pennsylvania customers to the north during that hour was available to Baltimore if it needed it? A. Yes, the interchange could have ceased to the northern customers and gone to Baltimore if they needed it.

Q. Then to the extent there was interchange furnished during that hour, it was available to Baltimore in addition to the 142,000 kw we have found on our Exhibit 42?

MR. GOLDBERG: What does counsel mean by "was available to Baltimore"? Do you mean Baltimore had a right to demand that it be sent to them?

MR. MYSE: The witness answered the question.

MR. GOLDBERG: You have got that in your present question and I wonder what you meant by that phrase.

By Mr. MYSE:

[8931] Q. What do you understand "interchange being available to Baltimore" to mean?

MR. GOLDBERG: I would like to know what counsel meant?

TRIAL EXAMINER: Just a minute.

THE WITNESS: Interchange is on a when, as and if basis, and if the supplier doesn't want to send it, he doesn't have to send it.

. . .

Q. What do you understand, Mr. Witness, by the term "Interchange being available to Baltimore"?

. . .

[8932] THE WITNESS: If there is any real need during that hour, if there was a need for additional power in Baltimore, why that could be obtained by curtailing interchanges to Pennsylvania customers.

By MR. MYSE:

Q. You mean by that curtailing the interchange which either Safe Harbor or Penn Water or both were furnishing during that hour to Pennsylvania customers?

. . .

THE WITNESS: If the Holtwood generating stations and the Safe Harbor generating stations were generating energy which was being transmitted to the northern customers on an interchange basis, such interchange could be stopped, and if the generation at Holtwood and Safe Harbor continued the [8933] same way, it would be delivered to Baltimore.

By MR. MYSE:

Q. Now, can you tell me how many kw of interchange were furnished to the Pennsylvania customers during that hour, and when I say "that hour", I am referring back now to the hour ending at 6 p.m. on December 11, 1944, Monday, which as I understand it is the Area 6 system peak hour for 1944? A. I believe I can tell you what the interchange was at Harrisburg, but I don't believe I have the hourly records for interchange with Philadelphia Electric Company through the railroad by hours.

Q. Let's have it for Harrisburg first, then.

MR. MYSE: I might say if we have a recess now he can look it up and answer after the recess.

TRIAL EXAMINER: I don't like to put the recess on the witness quite that way.

THE WITNESS: During that hour, that is during the hour ending 6 p.m. on December 11, 1944, 5 megawatt hours were delivered to Pennsylvania Power and Light Company at Harrisburg, and during the same hour, 3 megawatt hours were delivered by Pennsylvania Power and Light Company to Penn Water.

By MR. MYSE:

Q. Let's translate that into layman's language. When you say 5 megawatts you mean 5,000 kilowatt hours. Is that right? [8934] A. That is right.

TRIAL EXAMINER: Where do you find that?

THE WITNESS: That is not in any of the exhibits. This is from my work papers.

By MR. MYSE:

Q. Mr. Roland, do you have Table V-A of Exhibit 64 before you? A. Yes.

Q. Now, I see on line 20, a total of 24,000 kw listed by Mr. Davis as non-firm, whatever that means. I assume it means the non-firm demands of Pennsylvania customers on system peak Form 12 of — pool. Does that mean 24,000 kw interchange furnished to the Pennsylvania customers during the 6 p.m. December 11, 1944 hour?

MR. GOLDBERG: I object to that, Mr. Examiner. The exhibit was presented by the witness Davis. The witness Davis [8935] will be available to explain the figure.

TRIAL EXAMINER: Was this exhibit prepared under your supervision?

THE WITNESS: Very general supervision.

TRIAL EXAMINER: Can you answer the question?

THE WITNESS: I don't know whether all of that was on interchange basis or not. It is stated that it is non-firm. That would be either interchange or emergency.

By MR. MYSE:

Q. Well, all of it would be available to Baltimore during that hour, if Penn Water or Safe Harbor or both chose not to deliver to the Pennsylvania customers?

[3936] THE WITNESS: The 24,000 kilowatts were being generated at that time and delivered on a non-firm basis, and presumably therefore, it could be diverted to Baltimore.

By MR. MYSE:

Q. That is what you understand? Strike that. That is what you understood when I say available to Baltimore?

A. Yes.

MR. GOLDBERG: There are no legal implications involved in your question. Is that right?

MR. MYSE: I didn't intend any.

By MR. MYSE:

Q. Now, do you know whether or not the figure shown on Table V-A of Exhibit 64 on lines 15 to 20 inclusive, are figures for the time of this area 6 system peak demand for the hour ending 6 p.m. December 11, 1944? A. Might I have that Form 12 report for the combined systems?

(Report handed to witness).

THE WITNESS: The answer to your question is yes.

[9040] THE WITNESS: Mr. Examiner, there was a question asked me on page 8922 yesterday that I think should be cleared up somewhat. Line 21.

By MR. MYSE:

Q. 8922, answer beginning line 23? A. That is correct. I would like to ask Mr. Myse if he meant there one particular hour during the day where he stated daily peak?

Q. It is always one hour, isn't there during the day? It can't be two hours, unless it is by coincidence. A. If that is what you had in mind, I will want to modify my answer somewhat then in that I do find in Exhibit 42 hours during the daily peak when there was transfer from Maryland to Pennsylvania.

Q. Will you refer me to those hours, then? A. August 21, Monday, that is page 10.

Q. Which hour are you referring to? A. There were transfers from Maryland to Pennsylvania [9041] during every hour of the day. And one of those hours presumably was the peak hour that you had reference to in your question on line 2.

Q. All right. Now what other hours? A. What other days?

Q. Yes. A. I think that is true for the entire week of August 21, August 22, August 23, August 24, August 25. August 26 is a Saturday which I believe was ruled out as not being one of the peak days by your question.

. . .

[9043] TRIAL EXAMINER: I am not so certain that counsel shouldn't be confined in this respect. That we are now on a different line of inquiry. Your question as put to the witness requires that he go back and review in his mind the testimony of the last two days possibly if there is any matter of question of peak.

Now, in regard to the line of questioning that you are now engaging in since you initiated it I should think that you state the question.

MR. MYSE: Mr. Examiner I didn't initiate anything this morning.

MR. GOLDBERG: You initiated this line of questioning.

TRIAL EXAMINER: Let me inquire—did the witness start [9044] out by testifying as to peak?

MR. MYSE: You mean this morning?

TRIAL EXAMINER: Yes.

MR. MYSE: That was my understanding.

TRIAL EXAMINER: Well, he didn't.

MR. MYSE: He volunteered some information about the answer at 8922 that he wanted to clarify what he

meant by the answer in which the word daily peak was used.

Now, I am trying to find out what he meant by daily peak.

MR. GOLDBERG: You used it in the question.

TRIAL EXAMINER: I think that since you are putting a question to the witness in which that phrase is involved it is not quite fair to the witness to stop and ask him whether what he generally means by what he used inasmuch as he used it in his testimony.

[9045] MR. MYSE: I didn't introduce it in the questioning.

Well, maybe I can clear this thing up. I move to strike all testimony of the witness up to this point this morning. It was not responsive to any question of mine.

TRIAL EXAMINER: The motion to strike is denied.

[9050] Q. Well, would you consider the hour of maximum generation equivalent to the hour of peak demand on the Holtwood-Safe Harbor system? A. That is one way of measuring peak demands, but you may not be interested in that.

Q. I am asking you as an engineer. A. It is the peak demand on the generating plants.

Q. But it wouldn't be the peak demand on the system? A. Ordinarily not. I don't know whether the Holtwood-Safe Harbor system so treats it or not. I don't recall at the moment. Ordinarily that would not be the peak demand on the system. You would have to take into account energy received and energy delivered to other utility companies which would not correspond to maximum demand on the generating station.

[9063] THE WITNESS: That is not so. The contracts played a very small part in my testimony on this subject.

By MR. MYSE:

Q. Well, what part did they play? A. I was interested in knowing what kind of deliveries were being made at the various points, whether they were firm deliveries or interchange deliveries and whether the energy so delivered was paid for, just a general understanding of the contract. I didn't need to know all the details. It played no part in this study at all.

. . .

[9066] Q. Now, if I understood your opening statement this morning, Mr. Roland, the one that was not in response to any question, do you recognize what I am referring to? A. I do, yes.

Q. You said there was a backfeed, as I recall it, during the hours of daily peak hour on the Holtwood-Safe Harbor system. Is that it? A. Yes.

Q. Now, in making that statement, did you take into account any circulating energy which may be transmitted from one side of the Baltimore system over the 220 kv line to Safe Harbor, and then transmitted south over the other 220 kv line to the other side of the Baltimore Company system? A. No such energy was circulating on August 21.

Q. I think you referred to August 25, however, didn't you? A. I started with August 21.

Q. I am sorry. Just a moment. You say August 21 there is no such circulating energy. Is that your answer?

A. That is correct. There was some during three [9067] hours on August 22.

Q. How do you determine that? A. From Column 4 and Column 7, energy was being delivered from Maryland to Safe Harbor during that hour, and during the same hour energy was being delivered from Safe Harbor to Maryland.

Now, that may have been that it was coming up on one of the 220 kv circuits and going back on the other, or it may have reversed on both circuits during the hour, I don't know. I would have to go back and examine the daily log sheets to determine that.

Q. Well, that is a possibility at times though, is it not?

A. Which?

Q. That you have circulating energy going up on one 220 circuit and coming back immediately on the other 220 circuit.

A. But I wouldn't call it circulating energy.

Q. What would you call it? A. If Baltimore is attempting to feed to PEPCO, you have two parallel circuits, one 220 kv circuit that goes by way of Westport and Ellicott City and you have the other circuit by way of Riverside and Safe Harbor down, so the two circuits are in parallel and if you are putting energy from Baltimore to PEPCO you may have it going up on one and back on the other. If the process is reversed, [9068] where PEPCO is delivering to Baltimore, you may have it go up on one circuit to Safe Harbor and back to Riverside on the other.

Q. So that you may have a situation where PEPCO, that is Potomac Electric Power Company wants to deliver energy to Baltimore under its contract to Baltimore and in doing so the energy travels up one 220 circuit to Safe Harbor and down the other 220 circuit to Riverside in Maryland, is that right? A. That might result in this: Where energy is being transmitted to Safe Harbor over one of the circuits and simultaneously energy is being transmitted from Safe Harbor in the opposite direction over the other circuit, it doesn't necessarily follow that energy delivered by PEPCO goes to the Safe Harbor bus and then turns around and comes back out down to Baltimore.

Q. You say it doesn't necessarily follow? A. No. It doesn't necessarily follow.

Q. It is a possibility though. A. The energy delivered on one of the circuits would be co-mingled with energy

that would be generated at Safe Harbor or delivered to Safe Harbor at the same time from other sources of supply.

Q. If Safe Harbor were shut down there wouldn't be any co-mingling of energy, would there? [9069] A. If Safe Harbor were shut down and you had energy being delivered on one of the circuits, one of the two 220 kv circuits and out again on the other 220 kv circuit and there was no other energy coming into the 60-cycle bus then it would be Baltimore energy that would be sent from Baltimore to Safe Harbor and back to—

• • • Then it would be PEPCO energy that would be sent to Safe Harbor and back to Baltimore.  
• • •

[9078] Q. Now, with respect to the 110 kv loop, there are a great many taps on that loop, are there not? A. Well, I see two of them here between Riverside and Westport on this diagram, exhibit 216.

Q. Aren't there a good many more than shown on exhibit 216? A. I don't know.

Q. Aren't you familiar with that loop at all? A. I didn't study the Consolidated system.  
• • •

[9082] Q. What I mean is it possible that they may not have enough generating units to take care of the load of that side of the Baltimore system near Riverside, is that right? A. Such a situation may arise; I am not familiar with the Baltimore system.  
• • •

[9085] Q. Now, it could well be that the reverse could happen, there might be a deficiency in the Westport area and Riverside would be generating more than enough to take [9086] care of its area, and Safe Harbor shut down so that there would be a transfer from the Riverside area to the Westport area. A. I suppose that is possible, but I don't know anything about the Consolidated system, how it operates or what the relative loads are or what the relative generating capacities are.

Q. And you made no study to determine any of those things, did you? A. No, that was not involved in my study; I was studying the Safe Harbor-Holtwood system.

[9087] Q. Now, Mr. Roland, I think we can summarize the questions and answers we have been having for the last fifteen or twenty minutes by saying isn't it true that where we have two or more parallel paths between Westport and Riverside, as we do, and one of them is via the Safe Harbor bus, that any transfer of energy between Westport and Riverside would mean that some of the backfeed energy metered at Safe Harbor is energy generated and consumed by Baltimore? • • •

[9088] A. Of course your question assumes that there is an exchange between Westport and Riverside.

Q. That is right. A. I don't know whether that occurs, but when it does occur it would divide in those parallel paths. What I have in mind is if there was a transfer from Westport to Riverside, that transfer would take place over the various parallel paths, one of which would be Safe Harbor circuits.

Q. Then is the answer to my question "Yes"? A. With those qualifications that I made, that would be true.

Q. Yesterday we were talking, near the time we ended at least, about the maximum demands during various hours in the Area 6 system and maximum demands on the Holtwood-Safe Harbor system, as I remember it, distinct from the Area 6 [9089] system.

Now, my question to you is as follows: Isn't it true that the maximum kwh furnished at the time of the PW-Safe Harbor system peak would not only be different in quantity, but different in time to the maximum kwh furnished from the Area 6 system at time of peak? A. It was different in 1944. They did occur at different times.

Q. It is different in time and quantity, is it not? A. Well, the area 6 peak is over a million kilowatts, that is the

annual system peak, and the Safe Harbor-Holtwood system peak being a part of that obviously would be less than for Area 6.

Q. It is also true that the maximum demand in kwh or kw over an hour, if you will, on the Baltimore system peak would come at a different time from either the Area 6 system peak or the PW-Safe Harbor system peak? A. It might. I don't know whether that was true in 1944 or not.

Q. Did you make any study of that situation? A. I remember looking at them at the time of the peak on Area 6 and the Baltimore system by itself and the Holtwood-Safe Harbor system by itself, but I don't recall now as to when the peak occurred on the Baltimore system.

Q. Likewise the maximum demand in Kwh or kw over an hour on the Penn Water system alone would be—would come at [9090] a different time, be different in amount than such maximum demands at time of peak on either the Area 6 system, the Penn Water-Safe Harbor system, or the Baltimore system. Isn't that true? A. I haven't investigated it, but it is quite likely that the peaks would not coincide.

Q. Now, isn't it also true that the peak demand on Penn Water's 25-cycle system alone might come at an entirely different time than the peak demand on the Area 6 system, the Penn Water-Safe Harbor system, the Baltimore system or the Penn Water system as a whole? A. The peak demand on the 25-cycle system would occur when you had maximum amount of generation, which would probably be during the high-flow months of the year, and that would not necessarily, or it is very unlikely that it would occur at the same time as the area's or the system's peak.

Q. Or any of these other system peaks that we were discussing? A. Well, it may not be so different from the system peak on the Penn Water-Safe Harbor system.

Q. Why do you say that? A. Well, because both of them are related to maximum generation, as I under-

stand the way they report system peaks for the Penn Water- Safe Harbor system.

Q. Isn't it because they are coordinated? [9091] A. The two hydro plants are on the same river and if there was high flow at one place there would be at the other so you would have maximum generation at both plants.

Q. It doesn't necessarily follow, does it, because at the one plant you have a steam plant generating in addition to hydro? Isn't that correct? A. That is true. I just discounted the steam because that usually runs along at full load anyway.

MR. MYSE: May I have that question back where I talked about coordination of the two plants and the answer to it?

(Question and answer read).

By MR. MYSE:

Q. Does that mean that the answer you just gave that was read, means "Yes" to my question? A. Your question being that the simultaneous occurrence of peaks at the Holtwood plant and the Safe Harbor plant is the result of coordinated operation? Is that what you have in mind?

Q. No, that isn't it exactly. I think I can restate it. Isn't it a fact that one of the reasons why the maximum demand on the Penn Water system might coincide with the Penn Water-Safe Harbor system is because the two plants are coordinated? A. Whether they were coordinated or not it would seem to me that both being on the same river you would necessarily [9092] have maximum generation at both plants at the same time.

From your question there I am of course assuming that flows are above the full discharge capacity of the plant, so that you would be spilling water; and in that case you would have maximum generation at both plants. Now, if the flows were less than that, then you would only get maximum generation simultaneously at the two plants by coordinating their operations.

Q. I think you said some place in your testimony, it may be your direct at page 932—at that page you pointed out, did you not, that the eight—25 cycle hydro generating units at Holtwood were used and useful principally for delivering energy to Baltimore Company at Highlandtown. Is that right?

. . .

[9093] THE WITNESS: I stated that most of the energy generated by the eight—25 cycle generating units at the Holtwood hydro plant is delivered to the Baltimore Company at Highlandtown.

By MR. MYSE:

Q. Am I to understand by that answer that you mean that those eight units are used for service to Baltimore Company? A. Those units generate electric energy which is transmitted to Baltimore Company at Highlandtown, among other places.

Q. Can you answer my question directly, Mr. Roland?

MR. GOLDBERG: I object, Mr. Examiner. The question has been answered directly and responsively.

THE WITNESS: I stated the fact. As I understand it, you injected the word "service".

By MR. MYSE:

Q. No, used for service to Baltimore. A. You have the word "service" in there. I am saying these units generate electric energy which is transmitted to Baltimore.

Q. That means they are used for that purpose. Isn't that what you mean? A. Yes.

. . .

[9095] Q. Well, can they be used for any other purpose other than service to Baltimore? A. I stated in my direct what they were used for. They were used to generate electric energy delivered to Baltimore Company at Highlandtown. They were also used to generate electric energy which is transmitted to PP and L Company at Lancaster,

and at times they are used to transfer energy to the 60-cycle bus at Holtwood.

Q. You say the 25-cycle hydro generators are used to transfer energy to the 60-cycle bus. That is what you just said. A. Through the frequency changer.

Q. But the generators themselves can't do that, can they? A. The energy is generated by the 25-cycle units, and converted to 60-cycle by means of the frequency changers.

Q. Well, other than the uses you just spoke about, that is in generating 25-cycle energy delivered to PP and L at Lancaster, and delivering 25-cycle energy to the converters at Holtwood, those 25-cycle generating units have no other use than to generate energy to be delivered to Baltimore? A. Those are the only three outlets for the energy generated by the 25-cycle units at Holtwood.

Q. And it follows, then, does it not, that they couldn't be used for anything else? [9096] A. Unless you include use as a synchronous condenser.

Q. How would they be used in that manner? A. They would be operated as a motor to supply reactive to the system.

Q. Where would the energy come from to operate those units? A. That would have to come through the frequency changer from the 60-cycle system.

Q. Do you know whether that happens frequently at Holtwood or not? A. I don't believe so.

Q. What would be the purpose of operating those eight units as synchronous condensers? A. Offhand I wouldn't see that there would be any purpose in doing it. I said they could be.

Q. As a matter of fact, it is true, isn't it, that only one of the eight could be used that way? A. I believe it is number 8 unit that is used at times or operated as a synchronous condenser. Whether or not the others can be, I am not sure. I believe that there is only one, however, that is used as a synchronous condenser.

Q. That use is a very small number of hours, if any, during any one year. Isn't that right? A. I don't know.

[9097] Q. Will you refer to Exhibit 42 again, page 20? Will you refer me to the amount of energy delivered to Baltimore at Highlandtown during the Area 6 system peak hour in 1944? A. We discussed the hour a day or two ago, and as I recall that was the hour ending 6 p.m.

Q. Yes, that conforms to my recollection. A. In column 41, then, of Exhibit 42, page 20, 54,000 kilowatts were transmitted to Highlandtown sub-station during that hour.

Q. Do I understand that to mean that 54,000 kilowatts of demand on the Holtwood 25-cycle system by Baltimore during that hour?

THE WITNESS: May I have that question, please?

(Question read).

THE WITNESS: That question is somewhat confused.

MR. MYSE: It is garbled. Let's strike it out and start over.

By MR. MYSE:

Q. Will you tell me what that 54,000 means in terms of demand? A. It means that the 25-cycle units at the Holtwood hydro plant were supplying 54,000 kilowatts of 25-cycle demand in the Baltimore system.

Q. There would have to be that demand in the Baltimore system or they wouldn't be supplying it via Highland- [9098] town. Isn't that correct? A. Yes.

Q. And there is no question but that that is an actual metered delivery during that hour, is there? A. It is metered at Highlandtown.

Q. There might be a small amount of loss. Is that what you had reference to? A. No, not the way I answered your question. It means that Holtwood, to supply 54,000 at Highlandtown has to generate something more than 54,000.

Q. So that the demand on the Holtwood 25-cycle system, if I understand you, is slightly greater than 54,000 during that hour. A. You are talking now about the Holtwood 25-cycle system?

Q. Yes. Isn't that where the energy comes from? A. Yes. I think I understand what you mean, that the demand on the Holtwood 25-cycle system would be greater than 54,000, yes.

Q. I take it if we refer to page 4 of Exhibit 42, column 41, for the hour ending 8 a.m. we would find that 69,000 kwh were delivered during that hour to Highlandtown from the 25-cycle system at Holtwood. Is that right?

TRIAL EXAMINER: What page is that?

MR. MYSE: Page 4.

[9099] By MR. MYSE:

Q. And again that 69,000 figure means that the demand on the Holtwood 25-cycle system during that hour was something greater than 69,000? A. Well, the total demand on the Holtwood 25-cycle system as I understand it, was 81,000.

Q. Well, I meant the demand by Baltimore on the 25-cycle system at Holtwood. A. The demand of the Baltimore Company at Holtwood's 25-cycle system is the 69,000.

Q. Well, to take care of the losses, however, it would be something greater, would it not? A. But that is on Holtwood's own system, not on the Baltimore system.

Q. I mean on Holtwood's own system. The amount of capacity necessary to furnish that 69,000 to Baltimore would have to be greater than 69,000, would it not? A. As I said before, the generation at Holtwood would have to be in excess of 69,000 in order to deliver 69,000 at Highlandtown.

Q. To take care of the losses. A. That is right.

Q. Now, as I recollect that hour ending 8 a.m. on April 9, 1944, is the hour of peak demand on the Holtwood-

Safe Harbor system. Is that correct? [9100] A. Yes, as those two companies reported in their Form 12 report to the Commission for the year 1944.

. . .

[9129] Q. Isn't it a fact, Mr. Roland, that when you connect a motor to an electrical circuit you thereby consume energy at that point if the motor is running and carrying a load? A. Yes.

Q. Now, when you are running a converter at Holtwood, for example, the electrical machine on the end of the shaft, which is taking in energy is being operated as a motor, is it not? A. Yes.

Q. So that that motor is consuming the energy put into the converter, is it not? A. Well, the energy supplied to the motor end of it is converted into mechanical energy; if that is what you mean by consuming, why, that is correct.

Q. Now, Mr. Roland, it is true, is it not, that if we were to connect a motor, electric motor, to any electrical circuit, and put a mechanical load on that motor, that motor would consume electric energy, would it not? A. That term is often used when you have a conversion of energy from one form to another; it is very often called a consumption of energy.

TRIAL EXAMINER: Just a moment. Now, this is not critical, but it should be said. The Examiner overheard a whispered conference at staff counsel's table just before [9130] the witness gave his answer, in which the very words that the witness used in his answer were said audibly enough for the Examiner to hear, and presumptively the witness could have heard.

Now, I think that all conferences and all statements that are made at staff counsel's table or any other counsel's table, should be said in such a tone that they should not carry beyond the table. It is unfair to

the witness, and it can be unfair to cross-examining counsel.

MR. GOLDBERG: Mr. Examiner, if we had been discussing anything at counsel's table, staff counsel's table, it has been a discussion only amongst ourselves, and if the Examiner has been able or was able to overhear the tone at staff counsel's table, then the Examiner has extremely sharp ears, and I say, Mr. Examiner—

TRIAL EXAMINER (Interposing): I don't think my statement needs to be argued about; I think it is something that I should be permitted to say without counsel's saying anything about it.

I stated at the beginning that it was not critical, but I am stating it so that it will not be repeated.

MR. GOLDBERG: We can hear counsel for the respondents at staff counsel's table, and I imagine the Examiner can hear those statements, too.

TRIAL EXAMINER: Proceed, Mr. Myse.

[9131] MR. MYSE: May I have the last answer?

MR. GOLDBERG: I think the Examiner should state the approximate distances of various tables, and of the counsel table, and the witness and the bench.

TRIAL EXAMINER: I think that remark is to be considered as an impudence to the Trial Examiner.

MR. GOLDBERG: It is not so intended, Mr. Examiner. It is intended to state the facts.

MR. MYSE: May I have the last question read, and if it has been answered, I would like to have the last answer.

TRIAL EXAMINER: Read it.

(Question and answer read.)

By MR. MYSE:

Q. Now, Mr. Roland, it is true, is it not, that if we were to connect a motor, electrical motor, to any electrical circuit, and put a mechanical load on that motor, that motor would consume electric energy, would it not? A. It is ordinarily considered as being consumption, I mean, you are converting energy from one form to another, which is ordinarily thought of as consuming energy at that point, yes.

Q. And if I use that motor to beat my eggs in the morning that would be converting electric energy to mechanical power for the purpose of beating eggs? A. That is right.

[9132] Q. And for that purpose, I consume electric energy, do I not? A. Yes.

Q. And I am billed for that consumption by the local utility company? A. Yes.

[9133] Q. Now, likewise, when we have a converter at Holtwood, and that converter is being operated so that energy is being fed into the sixty-cycle end of the converter, and energy is being transmitted away from the 25-cycle end of the converter, the 60-cycle end is acting as a motor, is it not? A. Yes.

Q. And that motor is consuming electric energy? A. Yes.

Q. Being converted to mechanical power, is it not? A. Yes.

Q. And that power is being transmitted along a shaft usually? A. Yes.

Q. It could be transmitted by any other mechanical means, could it not? A. I don't have any other mechanical means in mind.

Q. Well, a set of gears, a belt. A. Well, even that would require a shaft, I presume, but that is all right.

Q. And the 25-cycle end of that converter on the other end of the shaft is acting as a generator, is it not? A. Yes.

Q. The mechanical power transmitted along the shaft or by whatever other mechanical means there are, turns the [9134] electrical machine on the 25-cycle end and that generates 25-cycle energy? A. Yes.

Q. So that it is fair to say, is it not, that any 60-cycle energy that is fed into that converter at Holtwood is consumed at the converter at Holtwood?

MR. GOLDBERG: I object to that. We have gone over that and the witness has stated what he means by consumed.

TRIAL EXAMINER: Read the question.

(Question read.)

TRIAL EXAMINER: You may answer.

THE WITNESS: In the sense that the 60-cycle energy is converted into 25-cycle energy.

By MR. MYSE:

Q. And also in the sense that the 60-cycle energy is used to turn an electrical machine on the 60-cycle end of the converter as a motor, isn't that right? A. That is part of the process. The various steps that are gone through in making that 60-cycle energy come out on the other end as 25-cycle energy.

Q. Well, it isn't the same energy, is it? A. There is no other source.

Q. There is no electrical connection across the converter? A. There is no other source of electric energy which is supplied [9135] to the converter other than the 60-cycle energy that is supplied to it.

Q. A prime mover could be a steam engine, couldn't it? A. Yes, but then it wouldn't be a frequency converter.

Q. Simply because you have a steam engine instead of an electrical motor, is that the only reason? A. No, you would not be converting energy at one frequency to energy at some other frequency.

Q. Now you are using the word energy there; there isn't any path of electrical energy that runs through the converter, is it? A. Well, we stated that before. There is no electric circuit that is continuous from the 60-cycle side to the 25-cycle side.

Q. Well, I still would like to have an answer to my question awhile back, isn't it fair to state that the 60-cycle energy fed into that converter is consumed in the 60-cycle motor on the sixty-cycle end of the converter.

MR. GOLDBERG: I object. It has been answered at least three times.

TRIAL EXAMINER: Didn't the witness answer the question?

MR. MYSE: I don't think the witness answered it directly.

MR. GOLDBERG: Don't think he answered what directly?

[9136] TRIAL EXAMINER: Read the question.

(Question read.)

TRIAL EXAMINER: You may answer.

THE WITNESS: I can only answer it the way I did before, that you supply 60-cycle energy to the motor which is converted to mechanical energy and then back from mechanical energy to electric energy and then it comes out 25-cycle energy at the other end.

MR. MYSE: Can't you answer that question yes or no?

MR. GOLDBERG: I object. The witness can answer the question that way.

TRIAL EXAMINER: Can you answer.

THE WITNESS: I can answer, yes, but with the qualification of what I mean by consumption of energy which is so stated in my last answer.

By MR. MYSE:

Q. Well, do you say yes with that qualification? A. With that understanding as to what is meant by the consumption of energy, yes.

Q. So that with that understanding of consumption of energy, any 60-cycle energy which may be generated at Safe Harbor and transmitted to Holtwood to the converters is so-consumed, is it not?

MR. GOLDBERG: I object to that question. It has already been answered, Mr. Examiner, it has been answered [9137] at least four times.

MR. MYSE: Not this question.

TRIAL EXAMINER: What is the difference?

MR. MYSE: We are taking it back to the energy generated at Safe Harbor, 60-cycles.

MR. GOLDBERG: What have you been talking about all along here?

TRIAL EXAMINER: You may answer the question.

THE WITNESS: The 60-cycle energy which is transmitted from Safe Harbor to the 60-cycle end of frequency changer at Holtwood is converted to energy of 25-cycles.  
By MR. MYSE:

Q. Well, you haven't answered my question. My question was is it consumed in the sense we were just talking about with the qualifications we were just talking about.

MR. GOLDBERG: I object to that, Mr. Examiner; the witness has just stated his conception of consumption for the sixth time.

TRIAL EXAMINER: You may answer.

THE WITNESS: It is consumed in the sense that the electric energy supplied from Safe Harbor at 60-cycles is converted into mechanical energy and from mechanical energy into electrical energy and then comes out of the 25-cycle end as 25-cycle energy.

[9138] By MR. MYSE:

Q. It is also the fact, is it not, that any 60-cycle energy generated by steam at Holtwood would be consumed in the same sense if it were fed to the converters at Holtwood; isn't that correct? A. Yes, it wouldn't matter what the source of the energy was; it is all 60-cycle energy.

Q. And that would be the only way energy—I am not saying whether it is electrical energy or mechanical energy—could get from the steam generators at Holtwood to the 25-cycle system at Holtwood. Isn't that correct? A. Yes, it has to go through a frequency changer some place.

Q. Now, if you will refer to the frequency changers at Safe Harbor, something else happens other than change in frequency, does it not? A. Yes, this change is also from three-phase to single-phase or vice versa.

Q. Can you explain that for the record in layman's language, from three-phase to single-phase energy? A. Well, a three-phase circuit is essentially three single-phase circuits with a time displacement of the voltages in each of those circuits. Those three single-phase circuits, of course, would not require six conductors. They usually are either three conductors or four conductors. [9139] But they are essentially three single-phase circuits with this time displacement that I have mentioned.

Q. What is there about the railroad load which would require single phase service instead of three-phase service? A. I believe it is because of the railroad use of a trolley—and wants to use single-phase motors.

Q. You can't feed three-phase energy into a single-phase motor and expect it to work. Is that the idea? A. I am sorry. I want to hear that again.

(Question read.)

THE WITNESS: I don't see how that would be physically possible. I mean whether it would work or not. I don't see how you could do it. You could take one phase off the three phase circuit and operate a single-phase motor, but I

wouldn't know how you put three-phases into a single-phase motor.

By Mr. MYSE:

Q. I don't know either and that is why I am asking you. Certainly you can't feed 25-cycle energy into a motor that uses 60-cycle energy and expect it to work either, can you? A. Not very well.

Q. Well, will it work at all? A. Your question was that you are supplying 25-cycle [9140] to a 60-cycle machine?

Q. Yes. 60-cycle electric motor. A. Offhand, I don't know whether that would operate or not. It certainly would not run at the rated speed, but whether it would run or not, I don't know.

Q. Well, you as an engineer would not advise anybody to hook up a 60-cycle motor to 25-cycle source. A. I would not.

Q. And you would not advise them to hook up a 25-cycle motor to a 60-cycle source of energy. A. I would not, no.

[9145] Q. Exhibit 42 is, as I recall it, limited to the year 1944 and certain selected days, is that correct?

MR. GOLDBERG: What year?

By Mr. MYSE:

Q. 1944, I am sorry; and certain selected days. A. Yes.

Q. Now, if the circumstances have changed since 1944, those circumstances would no longer hold? A. Obviously.

Q. The circumstances as shown in exhibit 42 would no longer be true? A. Well, I can't answer that; I don't know what circumstances you are talking about now.

Q. Well, one circumstance, for example, is the change in character of the flows to Metropolitan Edison Company.

A. It may or may not change it; I don't know.

Q. You have made no study to determine that, though?

A. I made my study for 1944; I don't know what effect [9146] the new contract has had on that.

[9152] Q. Now, at the bottom of Page 962, you were talking about co-mingling of energy. Is that right? A. Yes.

Q. And that co-mingling you were talking about takes place at both Safe Harbor and Holtwood when energy is supplied at those points simultaneously from more than one source? A. Yes.

Q. That means, does it not, Mr. Roland, that when there is energy being generated at Safe Harbor and being fed to the Safe Harbor 60-cycle bus or for that matter any other source of 60-cycle energy is coming into the bus through meter 8, and at the same time there is backfeed energy coming into the same bus via meters 5 and 6, that there is also a co-mingling of energy at Safe Harbor?

A. That is true, but it couldn't be coming in on all the circuits at the same time. Something has to go out.

Q. It could be coming in on all those circuits that I mentioned at the same time, couldn't it? A. From the generators only. From the 69 kv circuits and Maryland, I don't believe so.

Q. Couldn't it be consumed in the 60-cycle end of the frequency changer at Safe Harbor? A. It isn't very likely. It is physically possible, [9153] but I mean the situation that you describe, I couldn't believe would warrant it to occur.

Q. Then, let's limit the question by saying when energy is being generated at Safe Harbor and fed to the 60-cycle bus via meter number 1 on Exhibit 39 and backfeed is coming into the same bus via meters number 5 and 6 on Exhibit 39, that then under those circumstances co-mingling of that energy takes place. A. Yes.

Q. And anything that leaves the 60-cycle Safe Harbor bus is what you might call co-mingled energy? A. That is right, sir.

. . .

[9155] MR. SPARKS: Mr. Examiner, may I make a statement in regard to the matter which your Honor spoke about at the beginning of the afternoon session?

We understand that your Honor's position is that we should go forward with the cross examination of the witness Joseph tomorrow or Friday?

TRIAL EXAMINER: No, the Examiner's position is that the hearing should proceed tomorrow and Friday, and if the presence of the witness Joseph is necessary in order to enable the hearing to do so, then perhaps compulsory process, if necessary, can be used in order to produce the witness.

MR. SPARKS: Let me say this, if your Honor please: For reasons which I have mentioned before it will be impossible for Respondent to go ahead with the cross examination of anyone else but the witness Joseph, and since our cross examination of the witness Joseph tomorrow or Friday would be at the specific order of your Honor and over our objection, we would go forward if you order us to do so over our objection, and we will do so if the witness Joseph is present tomorrow or Friday.

TRIAL EXAMINER: Very well.

MR. GOLDBERG: I can state to the Examiner the witness Joseph will not be here tomorrow or Friday. As I stated weeks ago, it is impossible for him to be here during the month of December.

[9156] However, there is no reason in the world the hearing cannot go forward on Thursday and Friday with the cross examination of any of the other five witnesses who have testified on a number of subjects. I

confess that I am at a loss to understand this repeated protest about being required to go forward, this repeated statement that they are not prepared to go forward.

After all, they have only had 8½ months to prepare for cross examination. I just don't understand it when counsel for the Staff has almost continuously with the exception of one or two days gone through the cross examination of each and every one of these witnesses.

. . .

[9157] MR. GOLDBERG: I suggest that counsel move to strike Mr. Joseph's testimony, and I will put on a rate of return witness on rebuttal and we will agree to strike Mr. Joseph's testimony if that is the only way they can go forward?

. . .

[9166] By MR. MYSE:

Q. In any event, Mr. Roland, the 25-cycle capacity available to Baltimore from the 25-cycle system of Holtwood has not decreased since prior to June 1, 1931, has it? [9167] A. The amount of generating capacity available has not decreased.

Q. And as a matter of fact, one reason it hasn't decreased but has increased is because the amounts of 25-cycle delivered to Lancaster have decreased since prior to June 1, 1931. Isn't that correct? A. I believe that has decreased in the Lancaster area—25-cycle service.

Q. So if anything has happened since prior to June 1, 1931, there has been an increase in the 25-cycle capacity available to Baltimore from the Holtwood 25-cycle system. Isn't that right? A. Yes.

. . .

[9172] THE WITNESS: I could have picked some other metering point other than the Little Inch, the South Mannheim and South Akron. Those were distribution points on

the PP and L system in Lancaster. A considerable part of that energy is supplied by Holtwood and that in my opinion is a resale. It is not consumed on the PP and L system.

By Mr. MYSE:

Q. Is that what you had in mind when you spoke of resales at line 18, page 835? A. I had in mind that the energy which Holtwood sold to their various customers was in turn sold by the company purchasing from Holtwood to its customers.

Q. All of it? A. All of what?

Q. All of the energy received from Holtwood. A. Not necessarily. Some would be used in line losses and station services. No, I wouldn't say all of it, because [9173] I don't know.

Q. Well, the extent to which it is used in line losses, station services or consumed in the motor ends of converters if they have any, it is not resold, is that it? A. Well, that which is consumed as a line loss is not resold.

Q. And that which is consumed in station losses is not resold? A. No.

Q. And that which is consumed in the motor ends of a converter is not resold, is it? A. Well, it is resold in the sense that it is first converted into a different frequency, and then it is resold.

Q. First converted to mechanical energy and then back to electrical energy and then you say it is resold. A. That is the customary way of describing the process. The energy is supplied by Holtwood, taking your case as an example, being supplied to a frequency changer and before it is resold it is converted to another frequency. It is still the energy that Holtwood supplies and sells at that point.

Q. Now, will you take the deliveries to York Edison or Metropolitan Edison Company for the year 1944 and will you tell me how you determined that all of the Holtwood energy or Penn Water energy received by those companies was resold? [9174] A. I don't say that all of the energy is resold, because obviously in operating a system

there has got to be loss and station use, and so on, which is not resold to the customer. That is a part of the operations which normally takes place. You can't avoid it.

Q. Well, could you determine what percentage was not resold? A. No. Ordinarily the system losses might run anywhere from five to twenty per cent; but I didn't make any effort to determine what the system losses were.

[9251] Q. Do you consider an emergency supply similar to that provided under Exhibit 73 which you examined, any different [9252] from a supply of interchange?

[9252] THE WITNESS: Yes.

By MR. MYSE:

Q. What does the difference consist of in your opinion?

A. Well, as the name implies, emergency service is made under emergency conditions; under some special circumstances on the purchasing company's system the rates are usually different. The rate that the purchaser paid for emergency power is usually different than the one under an interchange arrangement, and usually there is an obligation on the part of the supplier for emergency service where there wouldn't be under interchange service.

Q. When you say there is an obligation on the part of the supplier for emergency service, would you tell me whether or not there is an obligation on the part of Penn Water or Safe Harbor to supply emergency service to Philadelphia Electric? A. There is such obligation by Hydro to supply.

Q. What does "Hydro" mean? Will you explain that for the record? A. That refers to Holtwood Company and Safe Harbor Water Power Corporation.

[9253] Q. And what is the obligation? A. "Hydro shall be obligated to supply through the Newlinville Substation the emergency requirements of PX," which means Philadelphia Electric Company, "in addition to the elec-

trical requirements of the territory stated in Section 1 of this Article, to the extent that Hydro may judge it has generating and transmission capacity available for such emergency supply without detriment to service to its other customers."

MR. GOLDBERG: You have been quoting, Mr. Roland?

THE WITNESS: I have been quoting from Section 2, Article II, of Exhibit 73.

By MR. MYSE:

Q. Now, am I to understand that the distinction you draw between the emergency service provided under that contract and interchange service is that there is an obligation here to the extent you read from Section 2 of Article II, of Exhibit 73, and that there is no obligation to furnish interchange service? A. I would have to read the sections also on interchange service, but ordinarily the obligation is not there on interchange service. There would be on emergency service.

[9256] Q. Well, you couldn't say that the entire payment for the year 1944 made by Pennsylvania Power and Light to Holtwood was for firm power service, could you? A. Not if it wasn't for firm power service.

Q. Well, it wasn't. Isn't that the fact? A. There were interchange sales during 1944.

Q. Isn't it a fact, Mr. Roland, that the entire payment made by Pennsylvania Power and Light Comp. in 1944 to Holtwood was not a payment for firm power sales? A. That is right.

Q. Or firm power energy? A. That is right.

Q. Included in that payment there were payments for other types of service. Isn't that right?

THE WITNESS: It would include payments for interchange power. I don't know what else.

[9264] Q. Mr. Roland, have you had an opportunity to check the billings that we were referring to this morning?

A. Yes.

Q. Now, can you tell me with respect to the payments made by Philadelphia Electric Company to Holtwood, under the contract identified in this record as Exhibit 73, 74, and 75, whether or not those payments covered payment only for energy and power or for other things as well?

A. There is a special facility charge included in the payment by Philadelphia Electric Company.

[9265] Q. So the payment made covers something more than just power and energy? A. Yes.

Q. Now, with respect to the billings to Pennsylvania Power and Light under the contract identified in this record as Exhibit 76 and 77, what does the payment made by Pennsylvania Power and Light Company to Holtwood cover?

A. That also includes a small special facility charge, in addition to charges for firm power and energy.

Q. It also covers the payment for service to the Pioneer Electric Light Company area does it not? A. That is also in Lancaster County, but I mean it is handled separately, but it is included in this bill.

Q. Now, what is the situation with respect to the payments made by Edison Light and Power Company in 1944 to Holtwood? A. That bill also includes a special facility charge, a small one.

[9270] Q. When you made reference to the sale of electric energy under Exhibit 73 did you give any consideration to the provision of Article VII, on Page 73? A. Did I give any consideration to that in determining whether or not it was a sale that was being made?

Q. Sale by Holtwood, yes, under this contract. A. No, in the sense that I was aware of Article VII, but also in this contract I believe Safe Harbor in effect is written out, in that Holtwood is supposed to act for and on behalf of Safe Harbor, as a result S. H. was not even a party to the contract.

Q. You say Safe Harbor is written out in effect? A. Well, in that Holtwood acts for Safe Harbor. It is in one of these contracts, I don't know which.

Q. Well, isn't it Article VII of Exhibit 73 that you have reference to? A. Yes, that is right.

Q. And doesn't it there speak of Holtwood acting as agent for Safe Harbor? A. Well, it says that Philadelphia Electric Company shall be entitled to deal with Holtwood Company in all respects as if Holtwood Company were the only party contracting with it hereunder. To me in effect it writes Safe Harbor out of the contract.

Q. That is what it means to you, is that right? [9271] A. That Holtwood acts as though it was the only party other than Philadelphia Electric Company.

Q. And it also says, doesn't it, Mr. Roland, that Safe Harbor authorizes and empowers Holtwood Company to act as its agent. It is very clear language there, isn't it? A. It so states.

\* \* \*

MR. MYSE: A similar provision appears in Exhibit 76, Article X, Page 13, does it not?

THE WITNESS: It appears that that Article, in Exhibit 76 is the same as the one that was in Exhibit 73, Article VII.

By MR. MYSE:

Q. And it was Exhibit 76 and 77 that you had reference to when you spoke about sales to Pennsylvania Power and Light Company at the bottom of Page 912 and top of Page 913, isn't that correct? A. Yes.